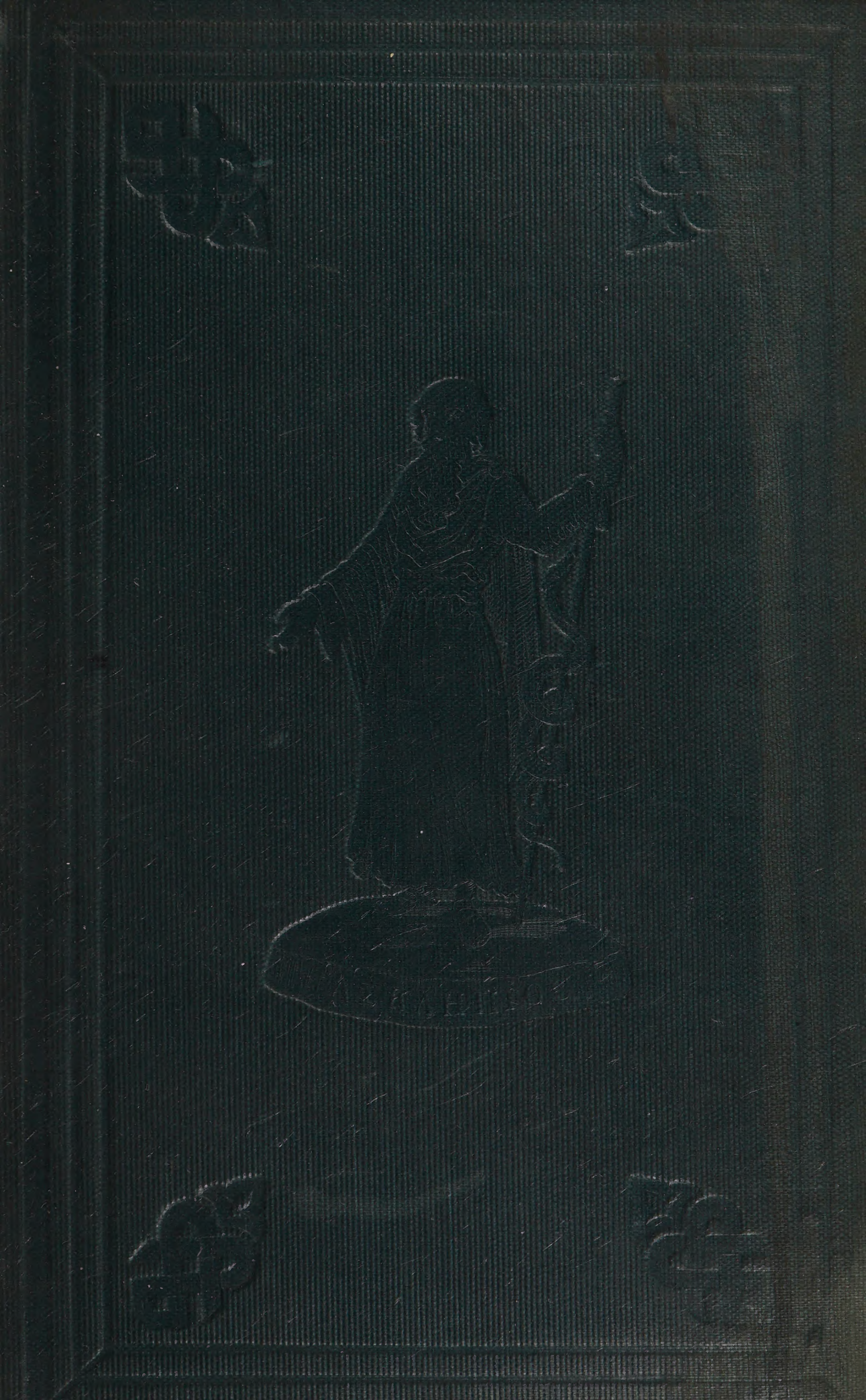

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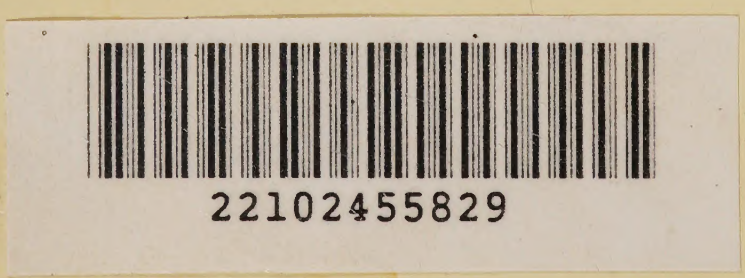

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OF THE

MEDICAL SCIENCES.

JANUARY—JUNE.

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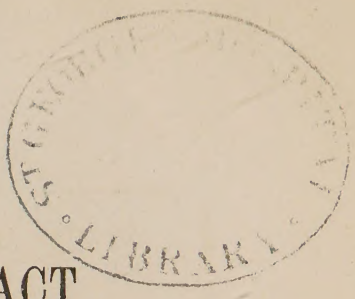

THE

HALF-YEARLY ABSTRACT

OF THE

MEDICAL SCIENCES:

BEING

A DIGEST OF BRITISH AND CONTINENTAL MEDICINE,

AND OF

THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES.

Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.
CICERO.

EDITED BY

WILLIAM DOMETT STONE, M.D., F.R.C.S. (EXAM.)

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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

ETC.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, & THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

ART. 1.—*On Cerebral Apoplexy in Cases of considerable Pleuritic Effusion.**

By M. VALLIN.

(*Gazette Hebdomadaire*, No. 5, 1870.)

M. VALLIN reports a case of a soldier, twenty-one years of age, who was admitted into the Val-de-Grace with pleurisy on the left side and considerable effusion filling about two-thirds of the left pleural cavity. The heart was pushed over to the right side. No abnormal bruits. Right side of chest healthy. In spite of an energetic treatment the effusion increased and the fever persisted. Thoracentesis was indicated, but M. Vallin decided upon postponing the operation until the appearance of the first symptoms of imminent asphyxia. Thirteen days after admission, the patient suddenly became unconscious and hemiplegic on the right side, sensibility remaining intact. Thoracentesis was immediately performed, but with no good results, and was again repeated at the end of a week. At this time a loose patch of gangrene was noticed on the sole of the right foot. The symptoms abated after the second operation, and the paralysis gradually disappeared. The pleuritic effusion, however, returned and necessitated a third performance of thoracentesis. The patient slowly sank from exhaustion, and died at the end of the third month after admission. At the post-mortem examination, a patch of softening was found in the left cerebral hemisphere, near the corpus striatum, and at the posterior extremity of this an excavation filled by a creamy fluid, the walls of which were irregular, of a bright yellow colour, and composed of soft and pulpy cerebral tissue retained in a network of fine and pale capillaries. This pulpy material presented under the

* Communicated to the Société Médicale des Hôpitaux.

microscope capillary loops, abundant fatty molecules, granular corpuscles analogous to those of colostrum, some hæmatoidin, and some altered blood corpuscles.

Two branches of the artery to the Sylvian fissure were found completely obliterated by a fibrinous clot.

M. Vallin makes the following observations on this case:—

"What interpretation is to be given of this cerebral lesion? Evidently we have here not cerebral hæmorrhage, but rather softening consecutive to vascular obliteration caused by embolism. The coincidence of the gangrenous patch on the right foot asserts the probability of migratory clots. It being admitted that at a given moment the emboli may be formed simultaneously, it remains to determine the starting point of these obstructing bodies. The heart and large vessels were perfectly healthy, and in no part of them could a trace of clot be found. But the interval of ten months between the attack and the autopsy explains sufficiently the failure of this search. If it be recollected, however, that on the thirteenth day after admission the effusion was very abundant, that the heart was much pushed away from its normal position, and that the pulse was small and feeble, it might be admitted that, at a certain moment, in consequence of the torsion of the artery and the deviation of the heart, and from the general inflammatory condition and the augmentation of fibrin, a small quantity of blood, slackened in its course, became coagulated in one of the chambers on the left side of the heart, and that under the influence of some movement on the part of the patient or palpitation, the clot thus formed was displaced and thrown into the greater circulation.

"It would probably be considered right to invoke in this case thrombosis of the pulmonary veins as the origin of the arterial embolism. One may conceive how much the circulation would be impeded in a lung impermeable to air, and thrust backwards by the side of the spine; beyond the flattened capillaries of the pulmonary artery the blood stagnates, and coagulates in certain radicles of the veins of the lung, and one may well be astonished that the rapid return of the circulation in an organ thus weakened is not accompanied more frequently after thoracentesis by accidents of an embolic character. In this probably we may find the explanation of certain sudden deaths in cases of pleurisy, either during the course of the effusion or after the operation, as have been observed by Trousseau and others."

Hitherto rapid death, preceded for a few moments by agony and struggling, has been attributed—and the autopsy has sometimes justified this view—to obliteration of the pulmonary artery by an autochthonous clot, or by an embolus from the right side of the heart, whilst instantaneous and sudden death has been explained by syncope (by reflex irritation of the nerves of the heart). This latter hypothesis is admitted in default of a better one, and in the absence of any appreciable lesion.

M. Vallin makes the remark that if, in his patient, the apoplectiform attack had been immediately fatal, he would probably have overlooked the cerebral lesion, for a certain time is required for the arrest of circulation to produce any appreciable disturbance; and thus this case would have been classed as one of death by syncope. It is necessary, therefore, not to conclude too hastily as to the apparent integrity of the

cerebral tissue in the absence of all vascular obliteration. It is probable that if, in most cases of sudden death during pleurisy, an examination of the brain and its vessels had been made with all desirable care, the key of the problem would have been discovered.

M. Vallin has sought in the works of authorities for cases of coincident apoplectiform attacks followed by softening with considerable pleuritic effusion, but has not gained much information. He found, however, in the *Bulletin de la Société Anatomique* of 1861, a case of an aged female, who in the course of an acute pleurisy was taken with hemiplegia, and died in twenty-four hours. The autopsy showed an obliteration of the anterior cerebral artery by a fibrinous clot without any appreciable lesion of the cerebral tissue. The left ventricle of this patient contained old fibrinous clots. M. Potain, the reporter of this case, attributes the symptoms to an embolism; but it does not seem that he established the relation between the pleurisy and the formation of the clots. In the *Army Medical Report* for 1859, M. Vallin discovered a very similar case to his own. This case was one of a soldier, who in the course of a pleurisy, with a vast amount of effusion, was suddenly attacked with apoplexy attended by hemiplegia; six weeks afterwards the patient succumbed to emphysema; localized softening of the brain was found, which had destroyed the whole of the corpus striatum. Unfortunately the arteries of the brain were not examined.

Art. 2.—*The Pathology of Cerebral Hæmorrhage.*

By MM. Charcot and Bouchard.

(*Archives de Physiologie Normale et Pathologique; Gaz. Méd. de Paris*, Mars 12, 1870; and *Brit. and For. Medico-Chirurgical Review*, April, 1870.)

Charcot and Bouchard, examining the causes to which cerebral hæmorrhages are usually referred, find that they may be arranged in three groups:—(1) Diminution of the consistence of cerebral tissue to such a degree that it does not furnish sufficient support to the vessels; (2) Increased tension of the blood, depending on hypertrophy of the left ventricle, atrophy of the kidneys, &c.; (3) Diminished resistance of the vessel in consequence of change in the walls (fatty degeneration or atheromatous incrustation).

Some of these (as hæmorrhagic *ramollissement*, for example,) are doubtful; others appear to be only accessory. Thus the authors find, with regard to arterial atheroma, that it is not present in 22 per cent. of cases, and that it is only present in a marked degree in 25 per cent. Again, hypertrophy of the heart was not present in 40 per cent. of cases. These statistics are founded on the examination of sixty-nine cases. The only pathological condition which MM. Charcot and Bouchard have constantly met is an aneurismal state of a certain number of the small intra-cerebral vessels. From the small size of these aneurisms the authors give them the name of miliary aneurisms. They are visible to the naked eye. They appear as small globular grains, varying in diameter from two-tenths of a millimètre to a millimètre, and sometimes a little larger. If they contain liquid blood, their colour is red or violet;

if, on the other hand, the blood is concreted or has undergone transformation, the aneurism is red-brown, ochry, or even blackish. The colour is also influenced by the variable thickness of the wall. The optic thalami, the corpora striata, the convolutions, the pons, the cerebellum, the centrum ovale, the middle peduncles of the cerebellum, the cerebral peduncles, the medulla oblongata, are the parts in order of frequency where these aneurismal dilatations have been most frequently met by the authors.

This distribution, they remark, agrees with that of cerebral hæmorrhages. Seen under the microscope with a low power, the vessels present a fusiform or sacciform dilatation. With a higher power it is seen that the wall of the aneurism is continuous with the tunics of the vessel which is its seat, but the three tunics are not distinct, they are fused, and the thickness of the aneurismal wall is less than that of the three normal coats of the vessel, a fact which accounts for their proneness to rupture. Careful observation of the aneurismal vessel reveals alteration of structure (*arterite scléreuse*). This change proceeds from without inwards, for the most considerable changes have their seat in the outer parts of the vessel, and the atrophy of the muscular coat depends on change in the adventitious tunic—whence the name periarteritis which they propose for it.

Art. 3.—*Idiopathic General Cerebritis.**

By Charles Elam, M.D.

(*The Lancet*, April 16.)

The object of the paper was to indicate the existence of a special inflammatory affection of the substance of the brain, not complicated by any altered condition of the meninges, and differing widely in most of its essential characters from any form of cerebritis or encephalitis hitherto described in systematic works on the subject. This was called *General Acute Idiopathic Cerebritis*. Its principal phenomena, positive and negative, were these: uniformity in its commencement, beginning with vomiting; uniformity in its termination, ending with death. Its duration was from thirty-six hours to twelve days. Its progress was remarkable from the absence of the striking phenomena that generally characterize compound cerebritis—that is, the form that is accompanied by meningitis. There was no convulsion, no paralysis, but little delirium, and that mild and transitory, and coma only supervened shortly before death, as it might do in many general affections. Three cases were selected from a number as illustrations, with brief details of the post-mortem examinations. This sketch was intended to supply a link in our nosological system, which, as it appeared to the author, had been in great measure, if not altogether, hitherto missing.

The President expressed a high sense of the value of Dr. Elam's communication. He believed that it was very rare to have inflammatory

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* Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, March 22.

affections of the brain in which the membranes did not participate, and asked for the experience of the Fellows upon this point.

Dr. Clifford Allbutt had been greatly interested by the paper. It appeared that in one case much post-mortem change had been found, in the other two nothing but congestion. Such cases as the last are perplexing. What are they? In the two no microscopic examination was made; in the one there were exudation corpuscles in the brain-substance. He hardly knew in what sense the word "brain" had been used by the author, and had observed no mention of the state of the mesocephalic ganglia. Even in the one case, how far was the state cerebritis? In the other two the use of the term was questionable. Proliferation of the connective tissue of the brain was a matter of great and unusual interest. He himself was only acquainted with partial encephalitis, and had only seen this either artificially produced by injuries, or existing at the borders of morbid growths.

Dr. Charlton Bastian knew nothing of uncomplicated cerebritis, from knowing no anatomical distinction characteristic of it. He thought the evidence did not entitle Dr. Elam to call himself the discoverer of such a disease. Dr. Elam had brought forward three cases which agreed in no one particular. In the first the most noticeable morbid change was hyperæmia, in the second general softening, in the third induration. These surely could not be placed in the same category. Of the first it would be very hazardous to speak. In the third it was impossible to believe that induration could have taken place from any acute change. It was a chronic process in all organs; in the brain, a chronic overgrowth of neuroglia. In the second case the chief point was the existence of exudation corpuscles, and these are now known to be the ordinary accompaniments of all degenerative changes; so that there was nothing to differentiate the change described from *ramollissement*. The very universality of the change was an argument against its inflammatory character, because the brain is a multiple organ as regards its blood supply, so that inflammation would affect its different portions independently. We should look for the causes of inflammation in one of three elements—either in the connective tissue, the nerve tissue, or the bloodvessels; and pathological changes in any of these three may be followed by other pathological changes in the region implicated. No reliance could be placed on symptoms as evidence of the nature of disease. An affection of the hemispheres would produce different symptoms from the same affection of the pons Varolii or of the cerebellum. Symptoms would not be dependent on the nature of the structural change, but on the part in which that change took place.

Dr. Radcliffe said that thoughts like those to which Dr. Bastian had given expression had passed through his mind while listening to the paper. He could scarcely allow that the post-mortem evidence adduced in support of the existence of cerebritis, as defined by Dr. Elam, was conclusive, but he was chiefly disposed to call in question the symptomatology of the disorder. He believed that the accounts of encephalitis in the ordinary text-books required revising; that acute pain in the head, and active delirium or high fever, or active symptoms of any kind, were not the symptoms commonly met with; but that mental dulness and indifference rapidly deepening, ushered in by vomiting, with little

or no feverishness, and with little or no disposition to paralysis beyond weakness of the bladder, were the usual symptoms, not only when the substance of the brain without the membranes, was affected, but also when the membranes were implicated in the inflammation. He therefore would not regard the symptoms given by Dr. Elam as diagnostic of cerebritis *pur et simple* as being really so diagnostic.

Dr. Wynn Williams inquired how soon after parturition the disease had shown itself in the case of the adult lady, and mentioned instances in which somewhat similar symptoms, leading to a fatal issue, had been attributed to the absorption of putrid matters after delivery.

Dr. Habershon believed that every one must frequently have been perplexed by the absence of post-mortem change in cases of apparent tubercular meningitis. Dr. Bastian had drawn attention to a correct division of these instances, according as they might be due to changes in the tissue elements or in the bloodvessels. In the latter case he believed that manifest hyperæmia was often due to capillary embolism; and he doubted if we should be warranted in regarding the changes described by Dr. Elam as being due to acute general inflammation.

Dr. Charlton Bastian wished to supply an omission in his former observations. He had frequently found that general turgescence was due to capillary obstruction, occlusions of various kinds disseminated throughout the brain; and he had found similar obstructions in other organs, as the liver, with clear evidence, from the consecutive tissue changes around them, that they had been formed during life.

Dr. Elam, in replying, said that he had selected three cases having a certain distinct clinical relationship. The changes were general—universal over the brain. The disease was acute—sudden in its invasion, without premonitory symptoms, rapid in its progress to death. The post-mortem changes were general, and had a certain relation. In the second case the brain was diffluent; and if the first patient had lived twelve days, his brain might probably have been in a similar condition. In the third patient there was no induration, but the texture was a little firmer than natural, with the hardness of the first stage of inflammation. This case lasted as long as No. 2; but the difference in the rate of morbid change might be due to the difference of age—one patient being a boy of thirteen, very young for his years; the other the mother of three children. In all, the changes were such as we are accustomed to call inflammatory. In No. 2, besides the very great softening, there was the roseate tint of the tissue, which stained a knife, and the presence of the exudation corpuscles. It was certainly much to be regretted that disease should be so illogical as to produce results which it ought not to produce, but it was our most important duty to trace facts as they occurred.

Art. 4.—*The Microscopic Morbid Appearances met with in the Brains of the Insane.*

By J. B. Tuke, M.D., and William Rutherford, M.D.

(*Edinburgh Medical Journal*, October.)

Drs. Tuke and Rutherford have published some careful observations of the morbid appearances presented by the brains of thirty insane

persons. All the brains examined were those of patients who had been the subjects of chronic insanity. The forms of disease under which they had laboured were general paralysis, dementia with paralysis, chronic dementia, epileptic insanity. The autopsies were made within thirty-six hours after death. The specimens of nervous matter were immersed in spirit and afterwards in a solution of chromic acid. The sections were coloured with ammoniacal solution of carmine, rendered transparent by spirit of turpentine, and set up in Canada balsam or glycerine. The parts of the brain examined were the tips of the frontal and occipital lobes, the convolutions on either side of the fissure of Rolando near the vertex, corpora striata, optic thalami, cerebellum, pons Varolii, medulla oblongata, and any portion which was manifestly the seat of disease. In every case marked departure from healthy structure was observed. The morbid appearances noted were as follows:—1. Grey degeneration, or sclerosis. This lesion has been observed by the authors (1) in the white matter of the corpus striatum; (2) in that of the cerebrum and cerebellum; (3) in that of the pons and medulla oblongata. It was found in eighteen instances; in nine of chronic dementia; in three of chronic mania; in three of general paralysis, and in three of epileptic insanity. This lesion the authors have observed in the white matter only. They agree with Rokitansky in regarding it as primarily a modification of the connective tissue or neuroglia—viz., fibrillation and increase of the neurogliar matrix, together with proliferation of its nuclei. The nerve tubes in the diseased tracts *appear* to undergo atrophy. The authors have seen no evidence of the production of fatty particles from the wasted tubes in the brain. Colloid bodies sometimes appear in degenerated tracts, but not frequently. 2. Miliary sclerosis. Semi-opaque whitish spots, resembling very small millet seeds; they vary in size from one-fortieth of an inch downwards, and are almost confined to white nerve-matter. They consist of semi-opaque molecular material lying amid a few exceedingly delicate colourless fibres. This lesion is due to the formation of cell-like masses of molecular material, in each of which a nucleus is sometimes discernible. By these bodies the nerve-tubes and bloodvessels are pushed aside, and may be seen curving round the diseased tracts. The authors suppose that these bodies originate in the nuclei of the neuroglia, not by proliferation, but by the transformation of a single nucleus into a cell-like body. This change they have observed in the white matter of the convolutions in four cases, in one in the white matter of the cerebellum. 3. Holes, in the white matter of the brain, varying from one-fiftieth of an inch downwards. The authors have met them most frequently in the corpus striatum, but also in the pons Varolii, and in the white matter of the convolutions. The holes have ragged edges owing to the abrupt termination of nerve elements at their margins. The authors are uncertain as to their nature. Unlike those recently described by Lockhart Clarke, they have no apparent connexion with bloodvessels. 4. Changes in nerve-cells. Atrophy of the pyramidal cells of the convolutions of the vertex was observed in three cases. They had shrunk to one-eighth of their normal size. Pigmentary degeneration of nerve-cells was frequently observed in the pyramidal and other cells of the cerebral convolutions, in the cells of the corpora striata and the corpora dentata of both cerebellum and medulla

oblongata. For this change the authors suggest the name *fuscous degeneration.* 5. Changes in nerve-tubes. Atrophy of nerve-tubes was frequently observed. Pigmentary degeneration of the nerve-tubes of the anterior and posterior roots of the spinal nerves was observed in a case of chronic dementia complicated with chorea. 6. Changes in blood-vessels. Fatty degeneration of the vessels of the pia mater and cerebrum was frequently observed. In general paralysis, tortuosity and aneurismal dilatation of the capillaries: on the walls proliferation of neurogliar cells and deposits of hæmatoidin were not unusual. In a case of paralytic dementia there was marked dilatation of the peri-vascular canals. 7. Granulations of the lining membranes of the ventricles and of the pia mater of the parietal and occipital lobes, and of the medulla oblongata, were observed in many cases of general paralysis, and old standing mania and dementia. They were the result of changed epithelium. 8. Amyloid and colloid bodies were seldom absent from the brains of old standing cases. The former readily coloured with carmine not exceeding twice the size of the human blood-corpuscle, the latter much larger and unaffected by carmine. The names amyloid and colloid are applied without reference to theory to distinguish them. "Virchow holds that one or other or both of these bodies are normal, or at least the result of natural decay. But the fact that they are more common in the brains of the insane than the sane, and the immense numbers in which they occur, suggest that they are actual morbid products." 9. Changes in nuclei of neuroglia. In some cases the number seemed diminished; proliferation, however, was more common. The authors do not regard the morbid appearances they have enumerated as the cause of insanity. They think it more likely they are the result of weakened or perverted evolution of the nerve-plasm. Nor do they regard these lesions as confined to cases of mental insanity, for they are well aware that certain of these morbid appearances occur in subjects where the insanity has only affected the muscles, and where the mental faculties have remained unimpaired.

Art. 5.—*Two Cases of "Porencephalie."*

By M. Heschel.

(*Prag. Vierteljahrschrift für die Praktische Heilkunde*, 1868; and *British and Foreign Medico-Chirurgical Review*, April, 1870.)

M. Heschel has reported two cases of a rare affection, to which he gives the name "porencephalie." Fistulous passages exist, establishing a communication between the arachnoid cavity on the surface of the hemispheres and the lateral ventricles. The following are the cases:—A man, æt. forty-two, tuberculous. The left arm one-fifth shorter than the right, atrophied. The right inferior extremity is a little thinner than the left. *Autopsy.*—Cranium hard and thick. The whole dura mater covered by points of exudation. In the right temporal region the dura mater was adherent with the pia mater, and there were scattered adhesions towards the convolution of the hemispheres. From the part of the temporal region where the adhesion existed, a canal traversed the

cerebral mass, and opened into the inferior cornu of the right lateral ventricle. The external opening of this canal was oval, five centimètres in length, three in breadth; it was slightly narrowed in the lower part. The walls of the canal were brownish. The rest of the brain was healthy. The lungs and liver were filled with tubercles; the latter contained also echinococci.

The second case was observed in 1865, it was that of a man, æt. fifty-five, also tuberculous. *Autopsy.*—The cranium was thick and compact. The brain of normal volume; the left cerebral hemisphere was traversed by a canal, which commenced at the origin of the principal superior convolution by a round opening, an inch wide, and proceeded a little forward to the left lateral ventricle. The external opening was covered by the cerebral membranes, and the walls were membranous. The rest of the brain was healthy. There were exudations on the dura mater, with depression of the surface of the cerebrum. Tubercles of the lungs, caries of the dorsal vertebræ.

Art. 6.—*On Dust and Haze.**

By Professor Tyndall, LL.D., F.R.S., M.R.I.

(*Medical Times and Gazette*, Jan. 29.)

The learned Professor began his lecture by stating that a sunbeam on entering a dark room becomes visible by illuminating the particles of dust floating therein. A beam of powerful light, such as that of the electric lamp, will prove the existence of these floating particles in the air of this room, or indeed in that of any other, even of the best ordered drawing-room in London, although they are invisible by the light of ordinary candles or gas. Some months ago, when he was engaged in a course of experiments on the action of light upon various vapours, he found this dust exceedingly troublesome. The air was wholly loaded with it, and although in his experiments it was of great importance to have the air entirely free from it, it became a matter of considerable difficulty to get rid of it. An "experimental tube" was filled with air which had been passed through tubes containing fragments of glass wetted with concentrated sulphuric acid, and marble wetted with a strong solution of caustic potash; but although the air was thoroughly dried by this means, the particles of dirt were carried along with it, and a beam of light passed through the tube discovered them in quantities as great as in common air. But it was found that by passing the air over a flame before letting it enter the drying tubes, every particle of dust was destroyed, and the beam of light passed through the "experimental tube" was *invisible*, owing to the absence of any illuminated particles. What did this prove? It showed, to his own astonishment, that this floating dust consisted of particles of combustible, and therefore organic matter—that the air which constantly surrounds us, which we are continually breathing, is loaded with living organisms, which are

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* Abstract of a Lecture delivered at the Royal Institution of Great Britain, Albemarle-street, Jan. 21.

of necessity constantly passing into our lungs—that the dirt of the air of London is organic, and not, as he had supposed, of the same nature as the sand of the desert of Sahara, inorganic, incombustible. To make this matter quite certain, Mr. Valentin, of the Royal College of Chemistry, constructed for him a gas furnace, so arranged as to heat a platinum tube and a roll of platinum gauze; the air was made to pass through this tube and gauze, so as to insure the contact of the dust with the hot metal, and the result is given by the following table :—

Quantity of Air.	*State of Platinum Tube.*	*State of Experimental Tube.*
15 inches.	Cold.	Full of particles.
,,	Red-hot.	Optically empty.
,,	Cold.	Full of particles.
,,	Red-hot.	Optically empty.
,,	Cold.	Full of particles.
,,	Red-hot.	Optically empty.

That is to say, when the air was passed *cold* into the experimental tube, the floating particles were not destroyed, and passed along with the air; but when the particles were consumed by the hot platinum, the experimental tube was "optically empty," there being no floating dust in it for the beam of light to illuminate.

The following table gives the results of experiments in which the air was allowed to pass into the experimental tube under various conditions of speed and temperature :—

Quantity of Air.	*State of Platinum Tube.*	*State of Experimental Tube.*
15 inches, *slow.*	Cold.	Full of particles.
,, ,,	Red-hot.	Optically empty.
quick.	Red-hot.	A blue cloud.
,, ,,	Intensely hot.	A fine blue cloud.

The cloud which appeared in the experimental tube when the air was passed quickly through the platinum was the smoke of the particles burned in the furnace. He had failed in his attempts to burn the particles in the open air by intense heat, but a flame of a spirit-lamp held immediately under the electric beam gave a result which caused him the most intense astonishment. In common with every chemist he had hitherto considered the flame of a spirit-lamp to be entirely smokeless. What then was his surprise to find that, on holding the flame under the beam, volumes of intensely black "smoke" were given off, blacker than he ever had seen issue from the funnel of a steamer! He tried several other flames; he burned spirit of wine on cotton wool; he tried the flame of a Bunsen's burner with a tall chimney, but always with the same result. Wreaths of the blackest "smoke" ascended through the beam of light, showing themselves in the distinctest manner. The question then arose—Could this blackness be smoke at all? Could no other cause be assigned to explain the phenomenon? To settle this question, he tried a flame of pure hydrogen gas, in which it was impossible that carbon could be to make real smoke. But, on this being held beneath the electric beam, the same black wreaths ascended. A mass of red-hot iron gave the same result. What then

was this darkness which was shown to exist in cases where smoke was impossible? It was simply the darkness of stellar space—the darkness caused by the absence of organic dust, showing that pure air is dark by virtue of its own intense transparency. Nothing could demonstrate more clearly the invisibility of the medium which renders all things visible. The flame held under the beam destroys the floating particles, and a stream of pure air ascends across the horizontal beam, which, jostling aside the dust-laden air, causes a black band of pure transparent air free from illuminated dust (in appearance exactly like smoke) to take its place across the beam. But it was also discovered that it was not necessary to consume the dust in order to produce pure air. It was found that a sphere of heated copper held beneath the beam of light produced the same "smoky" appearance, and that, too, even after the temperature of the copper had fallen below that of boiling water. Upon this it was suggested that a sphere of boiling water would produce the same result, and this was found to be the case, although in a less degree. The reason of this is simple; the heated body quickly heats the air immediately surrounding it, but not the particles; the pure hot air ascends and makes its dark track across the beam, but the particles are left behind.

The learned Professor then showed that any gas, provided it was free from these floating particles of dust, would produce the same dark mark across the beam of light. He took a common glass shade, and placed it with its mouth downwards so that the beam should pass right through it from side to side. The shade being full of the air of the room, the light was of course visible all the way through it. He then introduced into the upper part of the shade, above the beam of light, a tube connected with a reservoir of hydrogen gas. The hydrogen soon filled the upper part of the shade, and, occupying more and more space as its volume increased, it speedily filled the greater part of the shade, the beam of light *in* the shade fading from the sight of the spectators as the hydrogen occupied the space traversed by it. The shade being removed, the beam of light reappeared instantaneously in its place, but on the hydrogen being allowed to escape, a darkness as of a cloud of smoke passed across the beam, which immediately after its passage resumed its usual unbroken aspect. A gentleman present seemed inclined to question the success of this experiment, but the learned Professor partially repeated it, and completely proved his point. Having then observed that any other gas—*e.g.* common coal gas—would serve equally well for this experiment, he said that, seeing that the air we are constantly breathing is so entirely laden with these particles of organic matter, the wonder is that so small a portion of it is sometimes hurtful to human life. For some time an opinion had prevailed that contagious diseases were spread by a malaria; it was believed that matter in a state of decay entered people's bodies and produced in them conditions of decay like to its own. It was seen that the process of fermentation went on in this way, and that a little leaven leavened the whole lump. Why, then, it was asked, should we not believe that diseases propagate themselves thus? But in 1836 an answer was given to this question by the discovery of the yeast plant, and fermentation was shown to be a process of life instead of one of decay. In 1837 Schwann discovered that meat

highly heated and excluded from air never putrefied. Putrefaction is, then, the result of something derived from the air, which has the power of propagating itself in the body, and must be a living organism such as the dust of the air has been shown to contain. The "germ theory" of the propagation of disease has been slowly gaining ground in the opinions of medical men, and, at a time when it was thought improbable by many of them, the President of this Institution was one of its ablest advocates. These germs floating in the air enter the human frame, and, growing there, produce various disorders. In this way the Asiatic cholera, from a small beginning in the delta of the Ganges, in seventeen years occupied nearly the whole world. And the action of these germs has its exact counterpart in another part of nature's field; for as an acorn will produce an oak bearing a crop of acorns each capable of reproducing its parent tree, and so a whole forest may spring from a single seedling, so a germ of small-pox lodged in the body will produce a crop of pustules each one capable of reproducing germs like to the original one. Medical men know well how important it is to exclude the air from abscesses when they are being operated on, and instruments are specially constructed for this purpose; yet although the pus extracted on the first operation is sweet, on the second and all other operations it is generally putrescent, and swarming with living organisms called *vibrios.* This is caused by the germs clinging to the trocar, and by it introduced into the abscess, flourishing therein under favourable conditions of temperature and food. The only way to "clean" the canula and trocar of these germs is to heat the instruments as highly as their temper will allow. It was an ascertained fact that the troublesome hay-fever was caused by these same vibrios.

Having shown that it is useless to try to blow away the dust from a beam by means of bellows, since the dust from the bellows immediately replaces that blown away, the learned Professor proceeded to experiment on the state of the human breath as it issues from the lungs. His lungs being full of the common air of the room, he breathed through a heated tube so as to cause the breath to ascend through the beam of light, at the same time preventing any cloud of condensed aqueous vapour. At first no extraordinary appearance was visible, but soon the familiar dark clouds denoting the absence of illuminated dust appeared. He contended that this showed the history of the air in the lungs as clearly as if his skin and breastbone were transparent. The air which entered the lungs at the end of taking breath, being also the first to leave them on expiration, had not had time to deposit its dirt; but the air which entered the lungs first, and left them at the end of the expiration, having deposited its dust at the bottom of the lungs, showed its freedom from floating particles by its smoke-like track across the beam. Again, he filled his lungs with air filtered through cotton wool, and, on expiration, the dark clouds were seen from beginning to end. This proves that a filter of cotton wool will exclude these particles, as might also be seen by filling the nozzle of a common bellows with lightly packed cotton wool, and directing the air across a beam of light. Instinctively acting on this principle, a medical man, on entering an infected atmosphere, places his silk handkerchief over his mouth and nostrils; and, taking this hint, Dr. Bence Jones had tried the above

experiment, substituting silk for cotton wool, and had obtained substantially the same result, though in a less perfect degree. In conclusion, the learned Professor recommended the use of a respirator of cotton wool as a means of giving pure air to the lungs to all who are likely to be breathing germ-laden atmospheres; and at the present time, when London was full of scarlatina, he would recommend these respirators as the most efficient protection; and, armed by one of these, he declared his perfect willingness to enter any atmosphere, however infected it might be by scarlatina or other diseases.

Art. 7.—*On the Differential Characters of Contagion and Infection.*

By M. Moura.

(*Communicated to the Académie des Sciences.*)

1. The agents of infection, which are also those of epidemics, exist in a volatile or gaseous form, whilst those of contagion are in a solid or liquid state.

2. The pulmonary surface is the sole way through which the infectious agents are introduced into the organism—gaseous absorption by the skin being *nil* or insignificant; the contagious agents penetrate into the organism only after their application to the skin and mucous membrane whether intact or denuded; never by the respiratory processes.

3. The action of the agents of infection upon the economy is general, that of the agents of contagion is generally local before becoming general.

Art. 8.—*Experimental Researches upon the Production of Œdema.**

By M. Ranvier.

(*Gazette Hebdomadaire*, No. 53, 1869.)

Nearly two centuries ago Lower made the first experiment upon the production of hydropsies by ligature of veins.

The discovery of Aselli had previously made a great impression upon physicians, and it was then considered that hydropsies were caused by the rupture of lymphatic vessels and the pouring out of lymph. The English physiologist attacked this idea, and replaced it by his theory of œdema from blood stasis.

M. Ranvier repeated the second experiment of Lower. The two jugular veins were tied at the lower part of the neck in a dog and a rabbit. These animals presented neither lachrymation, nor salivation, nor œdema. A ligature was then placed around the femoral vein of a dog immediately below the aural ring. No œdema followed either on

* Presented to the Académie des Sciences by M. Claude Bernard.

the day of the operation or afterwards. These results agree with those observed by Hodgson in man. A ligature was then placed around the inferior vena cava. No œdema was produced. M. Ranvier then thought of bringing about hydropsy by paralysing the vaso-motor nerves. In order to attain this end, he profited by the knowledge of the distribution of the vaso-motor nerves gained by M. Claude Bernard's discovery. The sciatic nerve was divided on one side of a dog whose vena cava had been previously ligatured. The experiment was followed by considerable œdema on the side of the divided nerve, whilst the other lower limb remained normal. This experiment was repeated three times, and on each occasion with similar phenomena.

M. Ranvier thinks that it may be concluded that in the dog deligation of veins does not produce œdema; but that after venous obliteration hydropsy may be produced by section of vaso-motor nerves. The same results probably occur in man, and thence one may comprehend what importance these experiments will possess if they be applied to the clinical study of hydropsies.

Art. 9.—*On the Influence of Morbid Changes in the Blood on the Variations in the Temperature of the Human Body.**

By M. Andral.

(*Gazette Hebdomadaire*, No. 51, 1869.)

The facts which are about to be detailed show that diminution, even when very considerable, of the proportion of blood corpuscles, does not cause the temperature to descend below the inferior limit of the physiological condition; sometimes indeed it is seen to approach this inferior limit, but at others is raised to the superior limit, and even on some occasions exceeds the latter. A female weakened by profuse hæmorrhage dependent upon uterine cancer, presented no more than twenty-one parts of corpuscles: in this patient the temperature was maintained at 37° (centigrade). A man who had become markedly anæmic in consequence of a prolonged mercurial treatment had not a greater proportion of blood corpuscles than eighty-seven; his temperature was 36°·7. In a case of saturnine cachexia where the proportion of corpuscles was not higher than eighty-three, the temperature was elevated to 38°. A scorbutic subject the proportion of whose blood corpuscles was reduced to forty-four, had a temperature of no less than 38°.

In chlorosis the same thing occurs, and whatever be the diminution undergone by the corpuscles, the temperature in this, as in other forms of anæmia, is not lowered beyond the physiological condition; most frequently it maintains itself at the highest limit of this condition, and at times exceeds this. A chlorotic patient, in whom the corpuscles had undergone such a diminution that there were not more than thirty-eight parts of corpuscles to one thousand parts of blood, preserved a temperature of 37°·9.

From tables of twenty cases of chlorosis the minimum of the tem-

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* Communicated to the Académie des Sciences.

perature was found to be 37°; this was met with in two cases only. On three occasions the temperature was as high as 37°·5. In fifteen other cases it varied between 37°·6 and 38°·4, without the manifestation in any of these of the existence of an intercurrent inflammatory lesion to explain the elevated point.

These facts prove, from a physiological point of view, that the red corpuscles of the blood may vary much in quantity without the animal heat becoming modified; and from a pathological point of view, that these maxima of normal temperature, and even the commencements of morbid temperature in a certain number of chlorotic females, may give rise to those disagreeable sensations of heat of a febrile character of which many of these subjects complain, and which justify up to a certain point the expression, *fever of chlorotics*, employed by some nosologists.

Art. 10.—*Anosmia: Cases illustrating the Physiology and Pathology of the Sense of Smell.**

By William Ogle, M.D., F.R.C.P.

(*British Medical Journal*, Feb. 12.)

This paper began with an account of three cases which had fallen under the author's observation, in which total loss of smell was produced by a blow on the head. The author attributed the anosmia to rupture of the olfactory nerves, and pointed out how these nerves were especially liable to injury from blows on the occiput, which was the part struck in each case. Each patient complained not only of loss of smell, but also of loss of taste. True taste, however, was really unimpaired; what was lost was the power of recognising "flavours," which are sensations compounded of smell and taste. These cases afforded an opportunity of drawing a clear line between taste and smell, and showed that taste is limited to the perception of acid, salt, sweet, and bitter. These simple tastes compounded with smells form "flavours." Various cases were then considered which seemed in contradiction with this opinion—cases, namely, in which smell was apparently lost, and yet the perception of flavours remained. These cases were explained, and the contradiction was shown to be only apparent. A second group of cases followed, in which anosmia resulted from lesion of the nerve-centres. It was shown that anosmia was a frequent accompaniment of aphasia, and it was argued that the explanation of this is to be found in the proximity of the so-called external root of the olfactory nerve to the part of the brain usually affected in aphasia, a proximity which rendered the two parts very liable to be involved in one common lesion. The relative importance of the external and of the other roots of the olfactory bulb were considered, and it was held that the latter had little, if anything, to do in the perception of olfactory sensations. Lastly, a case of anosmia, recorded many years ago by Dr. Hutchinson, was discussed at length. A negro began, in his twelfth year, to lose his colour, and,

* Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, Jan. 25.

in course of time, became perfectly white. The loss of colour was accompanied by loss of the sense of smell, almost, if not quite complete. This seemed to have been hitherto considered a fortuitous coincidence. The author argued that such was in the highest degree improbable, and accounted for the anosmia by the destruction of the pigment of the olfactory region. Numerous arguments were used to show that this pigment plays an important part in olfaction, and that the keenness of this sense in man and mammals depends, in great part, on the intensity and extent of nasal pigmentation. Reasons were also adduced for believing that pigment is of use in the reception of auditory impressions, so that there would be a certain similarity in this respect between the three main organs of special sense, the eye, the ear, and the nose. Finally, an hypothesis was advanced as to the manner in which the pigment operates, and especially as to the manner in which it operates in olfaction.

Dr. Althaus complimented the author of the paper for the information which he had given on a subject regarding which little was known. Patients did not generally consult medical men on account of anosmia; hence the defect was in most cases discovered by accident. Anosmia was well known to be a not unfrequent consequent of injuries of the head; but he could not assent to Dr. Ogle's theory, that it was produced by injury of the olfactory nerves. He thought that it rather arose from rupture of bloodvessels and pressure on the olfactory nerves by the effused blood. He had observed in some cases, but not always, a combination of anosmia with aphonia. Dr. Ogle had not alluded to a case related by M. Claude Bernard of Paris, in which the olfactory nerves were found to be absent in a young woman. She was said to have had taste perfect, and to have been able to perceive the smell of flowers and of stale tobacco. In a case under his (Dr. Althaus's) care, the patient liked highly flavoured Moselle. How was this to be explained by Dr. Ogle's view as to the connexion of taste and smell? He had seen anosmia associated with epilepsy; one form of the epileptic aura was a disagreeable smell, sometimes preceding the attack by several days.

Dr. Broadbent had seen some cases of loss of smell which confirmed Dr. Ogle's remarks. In one case, after a fall from a horse, there was apparent fracture of the ethmoid bone, with loss of smell. In a second case, the patient was thrown on his back while riding: he remained unconscious for some time, and lost the power of smell. Taste was limited also, as in Dr. Ogle's cases. He had under his care a woman who had epileptiform attacks which commeneed on the left side. After one or two attacks, she rapidly lost sight; and, four months ago, she lost smell and taste He thought that in Claude Bernard's case an inference as to smell had been drawn from the fact that the woman was fond of flowers. He could not agree with Dr. Ogle as to rupture of the olfactory nerves; nor as to the importance of the external root of the olfactory nerve. The middle and internal roots were, he thought, of greater importance.

Dr. Webster said that affections of the sense of smell were very common in insanity; he thought that the disorder was real and not merely imaginary. Was there any relation between the whitening of animals in winter and a change in the power of smell?

Dr. Leared would like to have some information on cases where smell and taste were functionally disturbed without any history of injury. In a case of the kind under his care, he had, for want of a better explanation, assumed the existence of "concealed gout." He had lately under treatment a case of epilepsy, in which the attacks were preceded by an agreeable smell resembling that of peach-blossoms.

Mr. R. B. Carter knew a gentleman who had lost smell and taste, but who derived some pleasure from putrescent meat. He had also an increased power of using alcoholic drinks without becoming intoxicated.

Mr. Brooke said that Dr. Ogle's paper conveyed the idea that the universal medium of communication between external objects and the organs of sense was vibratory motion; and this was in accordance with what he had himself advanced in his work on the *Elements of Physics*.

Mr. Gascoyen had seen two additional cases of adhesion of the palate. In one, the patient desired an operation on account of the loss of smell. He had not consented to the operation. In his cases, there was a small opening, and he had advised the patients to wait, which they had done with decided advantage; the thickening had subsided, and the opening had become larger. In another case, a lady had syphilis twenty years ago. About twelve years ago, she lost the bones of the nose, including the turbinated bones. She had neither taste nor smell; objects could be rubbed on the hard palate without producing taste.

Mr. Savory remarked, as to the effect of poisonous herbs on animals of different colours, that it was said that they all ate them, but were differently affected. Again, there were certain idiosyncrasies irrespective of colour. Dr. Ogle explained the absence of smell in some cases by the shutting off of the current of air; but closure of the anterior nostrils prevented taste also. If the olfactory bulb were a true ganglion, injury of its roots should not affect the sense of smell.

Dr. Ogle replied to the remarks of the various speakers; and the meeting adjourned.

Art. 11.—*On Loss of Smell.*

By Dr. Notta.

(*Archives Générales de Médecine*, Avril, 1870.)

In this contribution are collected twenty-four cases of anosmia, or loss of smell. Dr. Notta concludes thus:—

"The causes of this affection are very diverse:—

"It may be congenital, and due to the absence of olfactory nerves.

"In certain cases it is but a symptom of some more serious affection, which by its situation has determined the destruction, compression, or alteration of the nerves of the first pair (cerebral tumour, exostosis, caries of the frontal bone, &c.).

"It may be the consequence of atrophy of the olfactory nerves.

"In cases where anosmia constitutes by itself the whole malady, it is proposed to call it essential, as it comes on without any appreciable cause.

"It has been noticed to manifest itself after falls upon the head, whether complicated or not with fracture of the cranium.

"It has been sometimes noticed after coryza, whether more or less prolonged, or complicated with influenza; sometimes again after repeated attacks of coryza.

"Finally, for the sake of giving as complete a list as possible, Dr. Notta mentions causes which are called by him external, because they are independent of the condition of the olfactory nerves, and because, notwithstanding the integrity of these structures, they may induce a more or less complete loss of smell—these are, absence of the nose, contraction of the nasal fossæ, polypi of the nose.

"Loss of smell manifests itself in different ways, according to the causes by which it is produced. Sometimes, as in atrophy of the olfactory nerves, or after repeated attacks of coryza, it will come on gradually, slowly, and take several years for its production; at other times, as after an injury, or, as in the case observed by Dr. Graves, it manifests itself suddenly; occasionally, as after coryza, anosmia becomes permanent after several temporary attacks.

"It is taught by physiologists," Dr. Notta states, "that certain gustatory properties of certain bodies may be perceived independently of the sense of smell—these bodies being sugar, salts, acids, sweets, bitters; others, on the contrary, require the complete integrity of the apparatus of smell—such as savouries, and solid and fluid food; and the very simple experiment is known, which consists in taking different meats or wines by closing the eyes and contracting the nose—an experiment by the aid of which it is easy to verify the exactitude of these physiological notions. Though many of the cases collected by myself confirm these data, there are still others, and these more numerous than might be imagined, which constitute an exception to this law, and in which the taste of savouries was preserved, although smell had been completely abolished. I make no attempt to explain this physiological anomaly, but having observed it, I think it my duty to make it known, and to show by another instance that pathological facts do not always give the same results as experiments.

"The duration of anosmia varies according to the cause which has produced it. Thus, when the olfactory nerves have been destroyed by a tumour or have become atrophied, smell is inevitably abolished, without any hope of return; but when the case is one of anosmia from an injury or after coryza, although smell may often be lost for ever, numerous instances have been recorded in which the olfactory functions have reappeared after a lapse of time, which has varied from three weeks to seven months—a result of some importance to remember, as it permits one to hope for the re-establishment of the function, so long as it has not been abolished for more than one year.

"Loss of smell has not, it is true, any serious consequences upon the condition of general health; nevertheless it is a disagreeable infirmity, particularly on account of the disturbance it most generally occasions in the sense of taste. Still, although some patients are painfully affected by the loss of this sense, there are many who take no heed of it, and by accident merely mention it to their medical attendant. There is no great necessity for regretting this, as the therapeutics of this infirmity are absolutely null. Nothing on this subject is to be found in authors. I have tried veratria and sternutory powders with the view of stimu-

lating the nervous ramifications in the pituitary membrane; but these attempts have been completely fruitless, and in cases where patients recovered the sense of olfaction, the cure had to be attributed to the unaided efforts of nature."

Art. 12.—*Select Clinical Cases, including Cases of Labio-glosso-Laryngeal Paralysis, Exophthalmic Goître, Arterial Pyæmia, General Chronic Arteritis, and Saturnine Gout.*

By Samuel Wilks, M.D., F.R.C.P.

(*Guy's Hospital Reports*, vol. xv.; and *British Medical Journal*, March 19.)

There are five cases of Labio-glosso-Laryngeal Paralysis—four males and one female. The first was a leather-dresser, aged forty-six, and his case was complicated with muscular atrophy; but, as the post-mortem examination is given, and is strongly confirmatory of the views of Professor Trousseau and Dr. Lockhart Clarke, it is, we think, deserving of brief notice. This patient had suffered from acute rheumatism five years before, but in the interval his general health had been good. In June, 1867, he was attacked with sore throat and slight dysphagia. He was admitted as an in-patient of Guy's Hospital in November of the same year. He then had dribbling of saliva; the lower part of his face was expressionless, the buccinators paralysed, and the soft palate partially so. He had difficulty in swallowing, and loss of power in the tongue. He had almost lost the power of eating, swallowing, coughing, and expectoration; and his speech was very indistinct. His muscles—especially the extensors—were atrophied and partially paralysed, especially on the left side, and the interossei almost completely so. With dieting, quinine, and galvanism, he improved slightly; but in December, after a fall, he became worse, and died on the 28th of that month. The post-mortem appearances were as follows. There was obvious atrophy of the roots of the hypoglossal nerves, of the inner roots of the spinal accessory, and also, very markedly, of the whole of the anterior roots of the spinal nerves, especially the cervical. The anterior half of the white matter of the cord was hardened and atrophied, and the grey matter was reddened and enlarged. In the fourth ventrical there was very obvious red-grey change of the calamus scriptorius, from the nib upwards and outwards for half an inch. The lining membrane and its choroid plexus were of deeper colour than usual. Of the other cases we have only clinical reports. In one, the left vocal cord was seen to be quite paralysed, the right partially so.

There are four cases of Exophthalmic Goître (Begbie's, Basedows', Graves's, or Stokes', disease). One of these is illustrated by a striking portrait, from a photograph. The thyroid gland, which was greatly enlarged, was found, at the autopsy, to extend, by its left lobe, "three-fourths of an inch below the upper edge of the sternum into the chest;" it bent the trachea to the right, touching the left side of the œsophagus for a space of three inches, and compressing the thoracic duct against the spine (the man was greatly emaciated). The cervical sympathetic

was imbedded in, and adherent to, fibrous tissue. Its middle ganglia were absent; and the others, as well as the thoracic and abdominal, were very white, and covered with a dense fibrous tissue, which prevented the grey matter from being seen. With the exception of increase of fibrous tissue, Dr. Moxon states that the ganglia presented no very remarkable changes when viewed with a one-fifth inch objective. The thyroid arteries were large; but the heart, excepting slight muscular degeneration, was fairly normal, and the eyeballs much less prominent than in life.

By Arterial Pyæmia, Dr. Wilks means changes of an embolic nature produced in peripheral organs (lungs, liver, spleen, kidneys, &c.), by fibrinous masses carried into the circulation from the heart; he suggests the careful examination of the last named organ by the stethoscope, in cases of pyæmic symptoms without obvious cause.

Under the head of General Chronic Arteritis, Dr. Wilks details the case of a man, aged thirty-six, who had no radial pulse on the right side, a feeble one on the left—(his fingers used to "go dead"). There was no pulsation in the femorals, and but little in the carotids. His feet swelled, and he had intense pain in the limbs. He lingered on in this state, with horrible sufferings, from Sept., 1868, till Feb., 1869, when he died. The terminations of the right brachial and the whole ulnar (? radial) artery were occluded, as were the right common, external, and internal iliac arteries, and both femorals. There were blocks in the left lung, spleen, and left kidney.

Dr. Wilks discusses the question of the Connexion of Gout with Lead-poisoning, expressing himself cautiously as to their being cause and effect, and giving details of three cases (in two of which there were post-mortem examinations) in which plumbism and gout were combined. Those who are familiar with the difficulties of arriving at the truth of statements as to personal habits will not attach too much importance to the reporter's description of the patients as being of "steady habits," and will therefore not be surprised at the caution with which Dr. Wilks expresses himself; for, since lead-poisoning is common in countries where malt liquors are not national beverages, and gout is uncommon in their inhabitants, it is clear that the question is still *sub judice*.

Art. 13.—*Clinical Notes.*

By S. O. Habershon, M.D.

(*Guy's Hospital Reports*, vol. xv.; and *British Medical Journal*, March 19.)

These include cases of Diaphragmatic Pleurisy, of Hæmatemesis, and Spinal Concussion, and Remarks on the Internal Use of Carbolic Acid; and, although appearing with this modest heading, are of great practical interest. The author considers that we are warranted in diagnosing diaphragmatic pleurisy from the following peculiarities: The suddenness and intensity of the pain ("the pain is agonizing"); the severity of the dyspnœa; the absence of physical signs, as long as the costal pleura remains free; the presence of pain in the shoulder; the inability of the patient to lie on the affected side; irritability of the stomach if left-

sided, and the occurrence of jaundice or other so-called hepatic symptoms when right-sided; and its usual speedy termination by resolution. He points out several sources of fallacy, as herpes zoster, local tumours, spinal causes, &c.; and the cases show another feature of interest, to which he also alludes—viz., that the temperature, when uncomplicated with pneumonia, &c., is generally low, 99°·7 and 100° being the highest noted. Dr. Edwin Long Fox (*Medical Times and Gazette* and *St. George's Hospital Reports*) and Dr. Reginald Thompson both agree that in pericarditis the temperature is but little affected; and the same remark applies to many cases of meningitis, so that we seem to be very near enunciating a general law of distinction between inflammation of mucous and serous membranes, that in the latter there is little rise of temperature.

The notes on hæmatemesis are very suggestive, and will not bear further condensation. Those on hæmatemesis from uterine and ovarian irritation are especially deserving of careful study; for many cases of this kind are, we feel sure, never referred to their proper cause. Dr. Habershon particularly recommends the internal use of carbolic acid in gastric and colonic fermentative dyspepsia, but recommends avoiding it when there is great irritability of mucous membranes. In one case, it was probable that salivation was induced by it. It may be given in pills, if combined with powdered tragacanth, extract of henbane, compound ipecacuanha powder, &c. His cases of concussion to the head and spine are of extreme interest in these days of railway accidents. In both, the severe symptoms came on a considerable time after the accident; and, in the fatal one, the blow on the head (from a hammer falling on the parietal bone) was followed by convulsions *four years* after, with hemiplegia; and, at the post-mortem examination, there was a limited collection of pus (size of a threepenny piece) on or under the membrane, "at the upper edge of the fissure of Sylvius." The grey matter of the right half of the brain was wasted; and the right half of the pons and anterior half of the right corpus striatum were softened.

Art. 14.—*On a New Method of Treating Gout.*

By Dr. Fontaine.

(*Gazette Hebdomadaire*, No. 4, 1870.)

The following is a report on Dr. Fontaine's paper from a Commission appointed by the Académie de Médecine.

In the first part of his work the author occupies himself especially with the researches of English physicians from Sydenham to Garrod. Dr. Fontaine adopts that pathology of gout which makes this disease depend upon an excess of lithate of soda in the blood.

Dr. Fontaine recognises the great efficacy of colchicum in the treatment of the early stage of gout; he gives the preference to the tincture of the seeds. He admits that the administration of colchicum ought to be frequently interrupted, but he pushes prudence to the length of stating that one ought not to prolong its use beyond the second or third day. From the results of experiments made upon dogs, he has no

doubt upon this point. Moreover, he does not administer colchicum by the stomach, for the purpose of preserving the healthy condition of this organ. With the permission of the patient colchicum is administered by M. Fontaine in an enema. By this method he thinks a too violent effect of the medicinal agent is avoided. The effect of the injection is more tardy and more moderate; it is not generally felt before the fifteenth or twentieth hour after the administration.

In order to combat the diathesis, or rather, according to the new ideas adopted by the author, to hinder the formation and to favour the destruction or elimination of uric acid from the economy, he has recourse to three medicinal agents—arseniate of potash, chlorate of potash, benzoate of lime.

The arseniate of potash is administered continuously, but in very small doses; to this arsenical salt is attributed a restorative action, the blood corpuscles are renewed, and the functions of combustion regulated.

The chlorate of potash is recommended for the purpose of oxydizing the uric acid. M. Fontaine admits, with M. Gubler, that a portion of this salt may be decomposed in the economy. He states that he has taken for several days as much as five grammes of chlorate of potash daily, and made out that a certain quantity of this salt disappeared at the same time as the normal proportion of chlorates of the urine was increased.

M. Fontaine prescribes benzoate of lime, not with the view of converting the urate into the more soluble hippurate of soda, but to bring to bear its solvent action upon the urinary compounds, and to exert its slightly diuretic action.

Art. 15.—*On the Prevention and Treatment of Scarlet Fever.*

By Charles F. Routh, M.D., M.R.C.P.

(*British Medical Journal*, January 22.)

At a meeting of the Medical Society of London, held January 3rd, Dr. Routh read a paper on some points connected with the Prevention and Treatment of Scarlet Fever. He first touched on its great fatality: from 1850 to 1854, 10,504 died from it in London, out of 74,895 deaths from all zymotic diseases. From the years 1853 to 1864, the deaths were in England, from searlet fever, 214,521—*i.e.*, 4·3 per cent. to all deaths from specified causes and 23·5 per cent. to all deaths from zymotic diseases. This was, however, below the mark, as cases of scarlet fever were often returned as cases of malignant sore throat and diphtheria, whereas typhoid eases were exaggerated. For the years 1848–1862, the deaths from scarlatina and typhus, to 1000 deaths from all zymotic diseases, were respectively 171 and 181. The poison of scarlet fever was second only in virulence to small-pox. Furniture, infected with scarlet fever, had conveyed the disease six months after use, and houses at longer periods than this after occupation. The rules for prevention, prepared by the medical officers of health, were excellent; but their compulsory observation (except in fearful epidemics)

would be incompatible with the liberties of an Englishman. Isolation of infected persons was the most operative for safety. This he showed from a table of the Registrar-General, for the years 1851–1861, compiled from 631 districts. Where the proximity of person to person was 402 metres, the deaths, to a thousand living, were 14; where it was only 23 metres, the deaths were 28 to 33. In some very unhealthy places and feverish districts, such as Maldon in Essex, Wolverhampton, Bridport, &c., the mortality was beyond what proximity of persons could explain, and was clearly due to local causes. Dr. Routh then referred to the nature of the *materies morbi*. Whether a ferment, or an oxyacid, it was completely destroyed by antiseptics and by agents which checked fermentation, such as sulphuric acid, chlorine, and carbolic acid. Two chief sources of its propagation were the journeymen tailors and tailoresses, who put upon the beds of their sick with fever the garments, which, so infected, were carried to the houses of their owners, and second-hand clothes shops. Public workshops and frequent fumigations of old clothes shops were the remedies indicated. Dr. Routh then considered the tendencies to death which had to be counteracted. These were, first, shock, in virulent epidemics, and at their beginnings, requiring stimulants, &c.; second, tardiness of the eruptive stage, and death by the specific poisons, requiring hot-air baths, stimulants, but especially an emetic at the outset; thirdly, death by violence of the fever. Here cold affusions to the skin, cold spongings, rarely bleeding, and inunctions were indicated. The *modus operandi* was fully explained, and the addition of carbolic acid in cold sponging and inunction was especially recommended. Fourthly, death from putrid sore throat killed in two ways—(*a*) by a poisonous atmosphere inspired, (*b*) by poison absorbed through the subjacent tissue. Carbolic acid and chlorine, or tannin, he believed, were preferable in such cases to caustics, because the local sore might be as effectively destroyed, and a disinfecting atmosphere in addition created. Lastly, death was produced by early uræmic poisoning. The treatment of the fever generally should be either solvent, to dissolve excess of fibrine, as by ammonia or acetic acid, or antiseptic. Acetic acid might be regarded also as antiseptic; but he was in the habit of giving citrate of ammonia, in an effervescing state, with carbolic acid internally.

Art. 16.—*Treatment of Scarlet Fever.*

By Sir William Jenner, Bart., M.D., F.R.S., Physician in Ordinary to H.M. the Queen.

(*The Lancet*, January 8.)

Sir William Jenner's experience tells him that we have no remedy for the general disease.

"We can only act upon the broadest general principles of calming the patient when excited; of stimulating him, to keep his heart beating, when he is exceedingly weak; of cooling the surface when the heat is excessive. Give him pure, fresh air to breathe. It is a disease that runs a definite course, and if you can keep the sufferers alive for a cer-

tain time they get well from that general disease which killed some of our patients. So you watch for the symptoms which threaten death, and endeavour to avert them. The *very* grave cases are hopeless from the first. For the mild cases little treatment is required. A cool room, light clothes, unstimulating diet, a mild aperient, a little chlorate of potash, which seems to allay the irritation or inflammation of the throat, and that is all you need do. Some give a little diluted mineral acid; sulphuric acid was all that used to be employed at the Fever Hospital when I was there. I think myself that the best is the chlorate of potash drink. I put a drachm of the salt into a pint of barley-water, and let the patient sip it down as he pleases.

"For some of the aggravations of the acute specific process, for some of the throat affections, we may do a great deal, and there we often save life directly; but for the disease itself, that which is the root of the matter, I repeat, so far as I know, you can do nothing. By the chlorate of potash you may do something towards allaying the throat affection; by a mild aperient you may allay a little the febrile disturbance which would be increased by confined bowels; by keeping the room well ventilated you prevent any increase of fever from the room becoming too close, and its air impure. And all the time you must watch the state of the urine, the skin, and the throat. One point I desire to impress on you—namely, the great importance of changing the clothes of the patient, as well as the air of the room. The blankets of the bed should be changed frequently, as well as the body-linen and sheets."

Art. 17.—*On Scarlatina sine Eruptione.*

By C. H. Robinson, L.K.Q.C.P.I., M.R.C.S.I., Demonstrator of Anatomy to the Ledwich School of Medicine, Member of the Surgical Society of Ireland, &c.

(*The Lancet*, February 12.)

"Some months since a gentleman in this city (Dublin), whilst in his office, was asked permission by a messenger of his for leave for a day, in order to bury a child who had died from scarlatina. Two other children of his, it seems, had died a short time previously of the same disease. His request was granted, not only for the time required, but he was directed to remain away for several days longer. Within two days afterwards this gentleman was attacked with sore throat, for which I attended him. In a couple of days the inflammation spread to the right ear; and the worst case of acute otitis I ever saw was the result, not only the mucous membrane of the external auditory meatus being attacked, but also the membrana tympani. After intense pain had been endured—and no one can form an idea of the frightful agony connected with inflammation of the ear who has not been a sufferer from some aural affection,—suppuration took place from the membrana tympani, as was seen by examining the ear with the auroscope. The throat affection only lasted a couple of days; and I shall not refer to it further, as it was of very slight importance. He was treated by blisters, local application of the tincture of iodine, and the ear was well syringed with

hot water and soap, glycerine on cotton-wadding being afterwards applied. When suppuration took place, a solution of sulphate of zinc (two grains to the ounce) was used several times daily, the applications after a time being changed to cold instead of hot water, as previously used. Some internal medicine was given, but nothing of much consequence, simply to prevent costiveness and to allay pain when required. This attack of otitis lasted several weeks; and during it all hearing was lost: in the commencement, from the swelling of the mucous membrane of the external ear; afterwards, from the effects of the suppuration. This, however, I am glad to say, was not permanent; but the sense of hearing did not perfectly return for several months.

"Within two or three days from the time this gentleman suffered from sore throat, several members of his family were also attacked with a similar affection. In two it was slight, lasted only three or four days, and merely required confinement to the house and an occasional application of a strong solution of nitrate of silver. In one case, however, it ran a very severe course: here the tonsils were very much swollen, and the uvula œdematous, being double the usual size from infiltration of serum, and resting on the tongue; whilst the soft palate and sides of the pharynx were of an intense scarlet colour. Swallowing was almost impossible, and gave great pain. The pulse was very frequent and weak, about 120 on the average during the height of the disorder; and great heat of skin was present. Great dyspnœa also occurred, generally in paroxysms. These paroxysms of suffocation came on at irregular intervals, generally about two or three times in the night, never in the day; and may have arisen from spasm of the glottis, or, more likely, from an extension of the inflammation to the aryteno-epiglottidean folds of mucous membrane, thereby causing an œdematous state of the parts, and accounting readily for the difficulty of breathing. Some nights I was called up three or four times, and obliged to swab the parts well with the strongest solution of nitrate of silver I could obtain. The treatment, besides cauterization, included the inhalation of the steam of hot water, and the internal administration of chloride of potash in large doses, with the tincture of the perchloride of iron; whilst large quantities of beef-tea, chicken broth, and other nourishing food, in combination with several glasses (six to eight) of port wine, with a couple of glasses of brandy, were daily administered. I also scarified twice, with a bistoury, the swollen tonsils and œdematous uvula. The tonsils, I may add, at the height of the disorder, were covered with whitish patches, whether consisting of a pseudo-membranous character, or formed by the nitrate of silver causing an albuminate of silver to be deposited, I cannot say.

"This state of things lasted about four days, when the anxiety began to get less, and the symptoms to remit, until at last the patient recovered. But her voice, after convalescence had taken place, was husky and smothered, and, although a good singer, her voice was entirely gone. This loss of her vocal powers continued for several months, until at last the huskiness gradually disappeared; but she did not recover her voice perfectly until nearly six months had elapsed from the time the attack commenced.

"It is my firm belief that these were all cases of that awful malady

scarlatina. It is true there was no eruption in any of the four patients, but from the history I have detailed, and from the severe symptoms which took place, as shown in the above hasty account of the affection, I think it will be acknowledged that my conviction is correct; and if so it proves also that a person who has taken scarlatina sine eruptione may carry the infection to another.

"In all the cases the patients had scarlatina before; but a secondary attack of this affection is not so very uncommon, I myself having had it three times, each time lighter than the preceding attack.

"Cases of scarlatina sine eruptione have been described by several trustworthy observers, so as to place the matter beyond all doubt; amongst the rest by Dr. Graves, of Dublin; also by Professor Trousseau, who styles them cases of *defaced* scarlatina (*scarlatine fruste*), and to whose account of the affection, in his splendid *Clinical Medicine*, I must refer the reader who wishes for more information on this interesting topic."

Art. 18.—*Cold-Water Treatment of Fever.**

By Dr. Drasche.

(*British Medical Journal*, February 19.)

In Section VIII. (*Internal Medicine*), Dr. Drasche of Vienna spoke on Cold-water Treatment of Typhus Abdominalis from observations made in the first division of the Rudolf Hospital in Vienna.

The cold-water treatment of typhoid fever, he said, has only lately gained its first scientific basis by means of the exact examinations of temperature in health and disease. Thermometric observations in typhus show that the surest criterion of the severity of the disease is the degree of heat. As soon as the temperature rises a certain number of degrees, characteristic symptoms appear very regularly, but vanish again as the temperature falls. No typhoid symptom is undoubtedly of so great and constant importance as morbidly high temperature. This consists in a chemical process; in an invisible but appreciable burning of the blood and of all the constituents of the body capable of being oxidized. Too abundant an increase of heat on the one hand, and too deficient a supply of combustible material on the other, can in the course of time only lead to such an attack on the organic constituents of the body that life is inevitably threatened. The most serious cases of typhoid fever owe their severity to the intensity of this process, the pathology and anatomy of which are not yet fully known. It remains for the future to demonstrate, by means of calorimetric measurements, the rapidity of metamorphosis in the direction indicated.

Cold water, employed systematically, not only lowers the temperature in typhoid fever, but keeps it permanently at a relatively lower degree. By overcoming the excessive oxidation, the most serious attacks of typhoid are deprived of their dangerous aspect; and the dis-

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* Extract from the Transactions of the German Naturalists and Physicians' Meeting at Innsbruck, Sept. 1869.

case is often made to take a more favourable course than all the different kinds of treatment hitherto known could effect. All typhoid patients do not, it is true, recover under the most circumspect and careful cold-water treatment; but comparatively more cases are brought to a satisfactory issue by this mode than by any other.

The simplicity of the proceeding is another advantage not to be underrated. Except baths (with or without douches and cold compresses), no other hydrotherapic treatment is requisite. If cold packing be used, the appliances are complete.

After these general remarks, Dr. Drasche states his own observations.

The cases treated by him exclusively with cold water in the Rudolf Stiftung, from January to September, 1869, amounted to forty, three of which came under the head of typhus. Thirty-six patients recovered, four died. The mortality was thus 10 per cent. In 1868, in the same Hospital, but without cold-water treatment, the mortality was 16·5 per cent. Liebermeister, he added, for comparison, had 9·7 per cent. deaths with his cold-water treatment; Jürgensen, 3 per cent.; and Brand lost no case at all.*

In consideration of the diagnosis, it must be stated that in all the cases, before any treatment took place, temperature had repeatedly risen above 39 deg. Celsius. It was generally taken in the axilla four to twelve times daily. In some cases, the thermometric annotations reached 400. In the rectum, it was measured on two patients only, who greatly objected to it. The maximum of fever-heat observed was 41·5 deg. centigrade (106·7 Fah.) The thermometer rose repeatedly above 41 deg. centigrade, in two cases terminating fatally, and in three other patients who recovered. The maximum temperature was not constantly reached in the afternoon and evening.

The longest period from the beginning of the disease, before the patient entered the hospital, was twenty days; the shortest, three; and average, eight. The mean time at which convalescence set in was the seventeenth day of the hydrotherapic treatment. In the greater number of cases it was, however, observed to begin before the tenth day of treatment.

The hydrotherapic treatment consisted chiefly in the employment of full and half baths, of 9 to 30 deg. centigrade, once or twice to eight times daily. Especially in cases where the bronchial complications were severe, or where the brain was affected, cold affusion of 60 deg. centigrade added. Packing in wet sheets, up to 8 deg. centigrade, was less often resorted to. Ice-bags, as low as 4 deg. centigrade, on the head, chest, and abdomen—especially the latter, where there was much diarrhœa—were frequently applied. Generally, a rising of the temperature to 39·5 deg. centigrade was considered as an indication for hydrotherapic treatment. Baths, however, were given if the temperature had not reached that point in some cases, when the patients lost their consciousness, or the tongue became hard and dry.

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* Drasche's statement about Liebermeister's percentage is incorrect. The Hospital Report of Bâle, in 1868, shows that, of 189 cases of typhoid fever treated by Liebermeister during that year, only 13 terminated fatally. Liebermeister's percentage is, therefore, 6·9.

The diet consisted of milk and broth, and extract of meat given in the form of soups. Some patients took the extract with apparent appetite, and could hardly get enough of it.

The post-mortem examination in the four fatal cases showed hypostatic congestion of the lungs, and only very isolated patches in the intestines. In one case, Bright's disease, of long standing, was evidently one of the causes of death. The second patient was an inveterate drunkard, and perforation of the intestines took place. In the third case, there were already bed-sores over the coccyx when the hydrotherapic treatment was commenced. In the last case, the patient died of general peritonitis, proceeding from the spleen, which was found softened and partially decomposed.

In order to examine the state of the arteries during hydrotherapic treatment, pulse-curves were taken before and after the baths by means of the sphygmograph, at various times in the day, and with varying temperatures. The typhus-pulse preserves its dicrotic character, even immediately after energetic refrigeration by means of baths. It may be strongly marked, whether the pulse be frequent or the contrary.

In order to prove the action of the hydrotherapic treatment—especially of the cold douches—on typhoid bronchitis, attempts were made to determine with the spirometer the vital capacity of the majority of patients. It sank even within a few days; in some cases so much so, that differences of 1000 to 1500 cubic centimetres were observed. Cold douches were regularly followed, in the first stage of the disease, by an increase of the amount of expiration, amounting to 300 cubic centimetres. At a later period, on the contrary, the vital capacity sank so low after baths and douches that the patient, immediately after the refrigeration, showed a difference of as much as 250 cubic centimetres. In the fatal cases with hypostatic congestion of the lungs, the vital capacity sank at most to half its former amount.

The condition of the weight of the body under hydrotherapic treatment is, in some cases, quite peculiar. One patient lost within eighteen days, up to the setting in of convalescence, 11 pounds 4 ounces, or 10 per cent. of his whole weight. In the first six days of recovery, the loss in weight was six per cent., which, with regard to the shorter period, was comparatively more. The maximum of the loss of bodily weight was, in persons recovering, 24 pounds 7 ounces, or 19 per cent.; in persons dying, 10 pounds, or 17 per cent.

The examinations of the quantitative proportion of urea by the *Titrir method*, showed a very striking connexion between it and the production of warmth. On days when from four to six baths of a low temperature were taken, the quantity of urea was 1 or 2 per cent. less than the previous days, when either no baths had been taken or when their temperature had not been lower than 26 or 28 deg. centigrade. When the temperature was higher than 39 deg. centigrade in the axilla, the quantity of urea was 3, 4, or even 5 per cent.; it diminished to 2 and 1 per cent. with a decided increase of the bodily temperature. Often no other symptom than the quantity of urea was required to indicate an aggravation of the disease. In some very severe cases, the amount of urea remained unchanged for three or four days after the beginning of convalescence, even after the use of more richly nitrogenous food.

The proportion of chlorides was generally regular. In high temperatures, they were present to the amount only of some tenths per cent.; but they increased to nearly one per cent. when the bodily warmth was energetically lowered. When the temperature did not surpass 38 deg. cent. in the course of a whole day, chlorides were present to the entire amount of one per cent.

In the majority of typhus cases under the water-treatment, there was more or less albumen found in the urine when the patients were first admitted. It generally coincided with a high temperature (39·6 to 40 deg. cent.) At the same time, the presence of urea was considerable —5 or 6 per cent. Chlorides seemed to be greatly diminished, fluctuating between 0·2 and 0·5 per cent. When, in those cases, the temperature sank within a few days, in consequence of the energetic refrigeration, albumen could only be found in slight traces; and on the fourth or fifth it generally had altogether disappeared from the urine.

There was no constant proportion between the height of temperature and the quantity of urine. Whereas small quantities only, not exceeding $7\frac{1}{2}$ ounces, were produced at a time when the temperature was 40 deg. cent. or above, great or small quantities appeared alternately with 40 or 39 deg. cent. At this stage of temperature happened the greatest quantitative differences, varying from $10\frac{1}{2}$ ounces to 65 ounces. Between 39 and 38 deg. cent., the fluctuations were less extreme. At and under 38 deg. cent., neither very great nor very small quantities were observed.

Art. 19.—*On the Use of the Thermometer in Typhoid Fever.**

By M. Constantine Paul.

(*Gazette Hebdomadaire*, No. 5, 1870.)

1. The thermometer indicates in a precise manner the progress of typhoid fever.

2. The type of typhoid fever is continued during the *période d'état*, and persists when the disease is about to terminate in death. When the patient recovers it does not end by a crisis, but rather by a progressive decline.

3. The type of decline is the remittent type. The remittence may commence by manifesting itself only every second day, but then it very soon becomes quotidian, which is the usual course.

4. All the recrudescences of the fever cannot be designated relapses.

5. There exists a primary form of simple and spontaneous recrudescence characterized by exacerbations affecting the tertian type. The sulphate of quinine may be given with advantage in cases of this kind.

6. In another form of recrudescence the exacerbations are quotidian; this lasts from one to four days, and is most frequently caused by excess in diet, or by fatigue occasioned through the visits of parents or friends.

7. When the same causes are reproduced they are followed by similar

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* Communicated to the Société Médicale des Hôpitaux.

exacerbations; and may give to the second period of the fever a longer duration.

8. If complications, especially phlegmasiæ, occur, a recrudescence of the fever is observed which affects the continued type.

9. These various recrudescences are not relapses, for this word should be reserved for the reappearance of an anterior period of the fever or of two periods.

10. There may be *immediate relapses* of the fever, but in order to have a relapse it is necessary that an entire fresh evolution should take place, and a second and fresh thermic curve during the period of the fastigium.

11. The curve of the stage of decline is characteristic. The tracing of acute miliary tuberculosis, of acute polyarticular rheumatism, or of acute albuminuria, can alone be confounded with those of the decline of typhoid fever.

Art. 20.—*Relapsing Fever.*

By Charles Murchison, M.D., F.R.S., Physician to the Middlesex Hospital, and Lecturer on the Practice of Medicine.

(*The Lancet*, January 22.)

The prominent symptoms of relapsing fever are: pyrexia, setting in suddenly, with rigors or chilliness; great frequency of pulse and heat of skin, but no specific eruption; severe headache and general pains, but mind usually clear; pain, tenderness, and enlargement of the liver and spleen; rapid breathing; vomiting more or less urgent, and frequently slight jaundice and constipation: an abrupt cessation of these symptoms about the fifth or seventh day, with copious perspiration; but after a complete apyretic interval, during which the pulse may be unusually slow, and the patient may have a good appetite and be up and walking about, an abrupt relapse on or about the fourteenth day from the first commencement, or sometimes later, running a similar course to that of the first attack, but terminating on or about the third or fourth day of the relapse. The disease is very rarely fatal, except in persons whose constitutions are weakened by previous illness; but it is a much more painful malady than typhus, which so commonly ends in death. Such is the clinical history of relapsing fever in a typical case.

Art. 21.—*On the Morphological Process in Inflammation.*

By Professor Billroth.

(*Medizinische Jahrbücher*, 1869; *Gazette Hebdomadaire*, No. 50, 1869.)

Billroth discusses inflammation as existing in the connective and epithelial tissues: 1. *Inflammation in the Connective Tissues.*—In order to apply to the phenomena of inflammation in the higher animals and in man the results observed in the frog, and particularly the fact of the issue of white corpuscles from the vessels, with all its consequences, it is necessary to demonstrate that the process is the same in man as it is in the frog.

One cannot make direct observation or follow completely the process in the mammalia, but the changes which may be observed in inflamed tissues are in support of the opinion expressed by Billroth that the issue of white corpuscles through the walls of bloodvessels exists both in warm-blooded animals and in the frog. In a preparation of subsynovial adipose tissue extracted from a specimen of subacute arthritis in a tuberculous patient, Billroth found in the immediate neighbourhood of the vessels a considerable quantity of young cells, whilst in the remaining portions of the connective tissue they were but sparsely scattered. An analogous phenomenon had been also observed by Billroth during the process of cicatrization; there again the vessels were surrounded by a considerable mass of cells, and, from the period at which his observations were made, he was led to consider these cells as due to formative irritation in the peri-vascular tissues. Billroth also finds arguments in the mode of development of tubercle, carcinoma, sarcoma, but these cannot be insisted upon, as we have no direct proofs.

One of the important peculiarities of inflammation in one of the forms of connective tissue, according to German authorities—viz., the cornea —consists in the fact that the fixed corpuscles of the connective tissue remain unchanged. A like fact is observed in the true connective tissue.

If attention be paid to the tail of a tadpole, the point of which has been cut off, it will be seen that the fixed corpuscles of the connective tissue at the level of the section remain unaltered; one does not see any swelling or nuclear proliferation within these. Billroth observed during one week the cicatricial process in a case of this kind, and never observed any changes in the fixed corpuscles. Likewise in examining with care the above-mentioned preparation of inflamed synovial membrane, there was no visible sign of any alterations of the fixed corpuscles of the connective tissue.

It is true that at certain points one may find masses of rounded cells or of protoplasm enclosing several nuclei, but one cannot recognise with certainty that these elements are formed in the corpuscles of the connective tissue.

To resume: the interpretation of these preparations leads rather to the idea of white corpuscles and of embryonic cells occupying certain parts of the tissue than to the idea of proliferation of the corpuscles of the connective tissue.

The question of the origin of pus-cells is then considered. If it be admitted that they proceed from the blood, and that they are leucocytes discharged from the vessels, there still remain many points to elucidate. No one can flatter himself that he knows the complete history of leucocytes, or that he has demonstrated how these bodies arise in the blood, in what number they exist, or how long a time they live. It cannot be admitted that man possesses so many white corpuscles or leucocytes as can be found in the products of a suppuration of one week's duration.

With regard to this subject, Billroth has endeavoured to determine the total value of the suppuration furnished by a wound in one week.

In a young man, whose elbow had been resected on account of a chronic fungous arthritis, the wound (longitudinal section) was left exposed and the pus collected in a porcelain cup. The quantity of pus in this case was somewhat less than if the ordinary dressings had been applied, because a portion of it desiccated and formed a crust.

A similar experiment was made upon a lad of fifteen years of age, after a partial resection of the elbow. The maximum daily supply of pus—the experiment being continued for eight days—was three ounces, of which quantity one ounce and three and a half drachms, that is to say, less than one ounce and a half, represented the solid elements of the purulent discharge. One cannot believe that so large a quantity of white corpuscles could be locally engendered during twenty-four hours in the inflamed territory.

As the origin of suppuration cannot be attributed either to cellular proliferation in the connective tissue or the formation of the corpuscles in the vessels of the inflamed parts, it becomes necessary to search further and, quite naturally, in those organs which are associated in the hematopoietic function, that is to say, in the lymphatic glands. In every inflammation there is swelling of the lymphatic ganglions, varying in intensity, but always appreciable on attentive exploration. Microscopical observations in these cases always present proofs of an abundant multiplication of young elements in the interior of lymphatic glands and in the lymphatic sinuses. In these very glands is effected the genesis of leucocytes, the constituent elements of pus. Billroth supports this opinion by proofs derived from pathology and experiment.

Again, the exaggeration of the proportion of white blood corpuscles in patients who suffer from abundant suppuration is a fact that has been actually demonstrated by very complete observations. The study of glands inflamed after cutaneous wounds shows that there is in their interiors a proliferation, a multiplication of lymphatic cells which is certainly associated with that condition of leucæmia one observes in patients affected with suppuration. Billroth on this subject relates some experimental researches which give indications for consulting the process of symptomatic adenitis.

The author enters here into detailed arguments based upon microscopic preparations with the view of proving changes in the connective tissue in inflammation and cicatrization. The following is the conclusion at which he arrives:—

The cells which in inflammation are met with in abnormal numbers and arrangement in the tissues are leucocytes. As changes in the fixed corpuscles of the connective tissue cannot be discovered, it must be concluded that all organized tissues—granulations, cicatrices, adhesions—which are met with during the inflammatory processes, have their origin in the white corpuscles of the blood.

2. *Epithelial Suppuration. Inflammation of Glands.*—The production of pus in catarrhal inflammation is evidently due to the formation of proliferating cells in the deepest seated layer of the mucous membrane. The whole question seems to depend upon the exact recognition of these proliferating or mother-cells. Various interpretations have been proposed; they have been considered as representatives of epithelial cells with proliferating nuclei, or, again, as epithelial cells into which leucocytes have been introduced. Volkmann and Stendener have recently upheld this latter opinion, which, however, is but a new form of the opinion formerly held in France by Robin, and which differs only as to the mode of origin of the leucocytes. In fact, whilst Robin and others maintained that leucocytes might spring directly from the

interior of epithelial cells, the former authorities admit that at the moment of the formation of young epithelial cells leucocytes are introduced into their interiors.

In other terms the question seems to be this: is there an endogenous generation of cells in the epithelial elements, or is there rather an invasion of the epithelial elements by the leucocytes through the phenomenon known under the name of intra-susception? Unfortunately the solution of these problems cannot readily be obtained; it may, however, be presumed that it will result from new methods of direct study on the development of these elements.

The researches of Billroth on glandular inflammation have led this observer to the conclusion that the production of pus cells does not take place at the expense of the epithelium, but that the pus cells or leucocytes make their appearance in the connective tissue which surrounds the glandular cul-de-sacs.

Art. 22.—*On Tubercular Ulceration of the Mouth and Tongue.**

By M. Trélat.

(*Archives Générales de Médecine*, Janvier, 1870.)

M. Trélat thus resumes several novel points to which he wishes to direct attention:—

1. The ulcers of the mouth, designated by the name of buccal phthisis and tubercular ulcers are, in certain cases at least, produced by the ulceration of true tubercles, a fact which has not been hitherto admitted.

2. Tubercular ulcers of the mouth have always been observed in tuberculous individuals; but their appearance may precede that of the pulmonary phthisis, although the inverse order is the more frequent occurrence.

3. The diagnosis of these ulcers may be established with certainty at all periods of the disease.

Art. 23.—*On the Propagation of Cancer and Tubercle to the Surface of the Pleural Serous Membrane, and especially to the Diaphragmatic Pleura.*†

By M. Lepine.

(*Gazette Médicale de Paris*, No. 14, 1870.)

In his treatise on tumours, Virchow mentions the possibility of a propagation of morbid growths to the surface of the layers of a serous membrane. "Where, for example, there exists," he writes, "a primary cancer of the stomach which extends as far as the serous coat, it is not

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* Read at the Académie de Médecine, Nov. 27, 1869.

† Communicated to the Société de Biologie.

a rare occurrence for the peritoneum to become the seat of a multiple cancerous eruption distributed not uniformly but at points often very remote, and so disposed as to be contaminated by substances which glide over the peritoneal surface of the abdominal wall, as, for example, near the lateral ligaments of the bladder and in the recto-vesical, recto-uterine, or utero-vesical pouch. At these points are formed other small islands of morbid growth forming a second generation of nodosities, just as if one had scattered some seed which had germinated here and there in places where it had fallen."

This is all that has been said, according to M. Lepine's knowledge, upon this interesting mode of the propagation of tumours. M. Lepine, however, has observed facts of the same order occurring in the pleural serous membrane, and these seem to him to be worthy of mention.

In three cases of cancer of the breast on the left side, unaccompanied by generalization, but which had attacked by direct propagation the parietal layer of the subjacent pleura, M. Lepine made out on the surface of this membrane the existence of numerous nodosities varying in dimensions and isolated the one from the other. These nodosities were more abundant on the diaphragmatic pleura, where they formed from their confluence a kind of large patch several centimetres in extent. The right pleura was sound. The lungs and other organs were absolutely free from cancer.

In young subjects who were not in other respects the subjects of miliary tuberculosis, but whose lungs presented tuberculous lesions extending to the visceral pleura, M. Lepine in many instances observed granulations existing upon the point of the parietal pleura which corresponded to the lesion of the visceral membrane, the rest of the pleura being healthy. There were no adhesions between the two pleural layers. In these cases, after an attentive examination, it seemed impossible to explain the localized affection of the parietal pleura otherwise than by admitting a contagion which had operated by contiguity.

In a fair number of cases the lesions of the parietal pleura present a remarkable localization. It is on the diaphragmatic pleura around the central tendon of the muscle and at the place where the muscular fibres end that one may observe these granulations seated. Sometimes they rest upon a false membrane, in other cases there is no trace of such a structure. Sometimes they are few in number, at others their number is very considerable; but even in the latter case, they generally respect that part of the pleura which corresponds to the central tendon, and form by their agglomeration at its periphery, a pretty regular circle. It is probable that this localization depends upon special anatomical dispositions, and that in this will be found the reason of the greater susceptibility of this region of the pleura. Perhaps it is due to a greater richness of the lymphatics at this point; but the knowledge we possess concerning the structure of the diaphragmatic pleura in man is not yet sufficiently precise for one to give an affirmative answer on this point.

M. Lepine remarks in conclusion, that in two of the cases observed by him, the lesion that had been the origin of the granulations was not tuberculous but was a kind of caseous pneumonia. It is interesting to note that an affection of this nature may give rise in *an immediate manner* to true tubercle. Caseous products, according to Buhl, may

produce tuberculosis, but then they had been previously introduced into the circulation, which did not take place in the two cases observed by M. Lepine. Is there not some reason for admitting, M. Lepine adds, a mutual parentage between caseous pneumonia and tuberculosis.

Art. 24.—*On the Origin of Pus Globules.**

By MM. Vulpian and Hayem.

(*Gazette Hebdomadaire*, No. 7, 1870.)

M. Vulpian recalls the fact that he presented on a previous occasion a manuscript by M. Hayem, on the mechanism of suppuration, which confirmed on most points the facts that had been published by Cohnheim. If the pus globules are nothing more than leucocytes of extravasated blood, one ought in all cases of suppuration in man to be able to make out, when this investigation is possible, the various phases of this phenomenon of the emigration of leucocytes. M. Vulpian has already cited the results obtained by Koster, and Volkmann, and Steudener, with regard to erysipelas, and has verified these in several instances; he has also announced that his observations on the skin when irritated by blisters have led him to conclusions completely confirmatory of the ideas of Waller and Cohnheim. The present memoir is intended to indicate fresh facts, the significance of which is equally decisive. Some of these were observed by M. Hayem, others by M. Vulpian himself.

Pericarditis.—M. Hayem, on examining the newly-formed membranes uniting the two layers of the pericardium in a case where there was adhesion over an aneurism of the ventricular wall, saw in these, globules of pus which had accumulated about the vessels. These vessels were filled with white and red corpuscles.

Encephalitis.—In centres of encephalitis produced by experimental irritation in rabbits and dogs, the vessels were found to be filled with red corpuscles, whilst the peri-vascular sheaths were swollen by a quantity, more or less great, of white corpuscles.

Myositis.—Leucocytes were also observed along the veins in the neighbourhood of small abscesses formed in a muscle after typhoid fever; the same appearances were presented in artificially inflamed muscles of dogs.

Fistula in Ano.—Finally M. Hayem, in studying sections of the wall of an intestinal fistula made perpendicularly to its direction, found below a rather thick epithelial layer, irregular papillæ containing vessels which were surrounded by a great number of white corpuscles. The neighbouring connective tissue was rich in anastomotic spaces which contained analogous bodies to those surrounding the vessels.

M. Vulpian has examined several tissues in the course of suppuration, principally mucous membranes and integument: in all cases in which it was possible to make sufficiently fine preparations, he made out a disposition of leucocytes similar to that described by M. Hayem. Things were thus presented in an instance of subacute gangrenous cyst

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* Communicated to the Académie de Médecine.

observed in a dog, after transverse section of the spinal cord. At several points of the preparations were seen masses of leucocytes in the immediate neighbourhood of the vessels, which were filled with red corpuscles mixed with a small number of the white corpuscles.

In a case of facial erysipelas accompanied by erysipelas of the mucous membrane of the nasal fossæ, this membrane contained a very great number of leucocytes, some of which were disseminated, and others, much more numerous, collected around the venous vessels. These vessels—and a similar disposition was also presented in the integuments—likewise contained a great number of leucocytes, which were found as well in the thickness of the vascular walls.

In a case of inflammation of the mucous membrane of the frontal sinus in a syphilitic subject, were perceived in preparations examined under the microscope, vessels filled by a very considerable number of leucocytes in the midst of red corpuscles; but there was so great a mass of leucocytes contained in the intervascular spaces, that one could not distinguish whether there was any relation of distribution between the seat of the vessels and the accumulation of the white corpuscles.

The mucous membrane of the bronchi, in cases of chronic bronchitis, also showed leucocytes in great number in the neighbourhood of the superficial vessels which contained very many similar bodies.

Similar appearances were presented in preparations consisting in sections made from the edges of a suppurating wound. In this case the incision had been made in the superior region of the dog's thigh for ligature of a crural vein. At several points where the quantity of leucocytes disseminated below the surface of the wound was less considerable, it was easy to see that these bodies were collected in very great quantities, and pressed against each other in the immediate neighbourhood of the vessels, and that they were more and more separated from each other as they became more remote from the walls of the vessels.

In addition to the facts already mentioned in relation to the skin in erysipelas, and under the influence of venesection, M. Vulpian directs attention to the condition of this membrane in cases of irritation by croton oil and of variola. M. Vulpian having had occasion to examine the skin of the neck in a case where it was covered by innumerable vesicles produced by friction with croton oil, and at the time when these vesicles contained a thick serosity, was able to make some very significant preparations. After having macerated the skin for some hours in alcohol, thin sections were made with a razor perpendicularly to the surface of the skin. These sections were then treated with glycerine and acetic acid. At the points where the vesicles existed, the deep-seated parts of the Malpighian layer were separated in such a manner as to constitute kinds of areolæ, irregular both in form and dimension. The horny layer of the epidermis appeared to be but slightly modified. The change in the Malpighian layer did not reach to the row of cells immediately contiguous to the dermis. In the areolæ some leucocytes were found scattered here and there. The cells of the Malpighian layer in the neighbourhood of these areolæ, and even along the whole extent of the irritated portions of skin, seemed to be somewhat swollen; in several of them the nucleus had undergone vesicular alteration, well studied as a mechanical result by M. Ranvier. But what was of particular interest

with regard to the subject in question, was the fact that the vessels of the dermis near to the epidermis were filled in great part with leucocytes at the points which corresponded to the vesicles. The capillary loops contained in the vascular papillæ of the dermis at these points also contained numerous leucocytes; and it was even possible to observe some leucocytes enclosed within the walls of these vessels, and others in the narrow space existing between the summits and the lateral parts of the capillary loops and the deep surface of the layer of Malpighi; and others again, deformed in various ways, in the act of penetrating among the epidermic cells contiguous to the dermal papillæ. In this mass one had in view all the stages of the straight road taken by the leucocytes between the vessels of the dermis—their starting-point, and the morbid areolar spaces of the Malpighian layer—the end of their voyage.

M. Vulpian has also examined the skin of several subjects after death from variola either simply confluent or both confluent and hæmorrhagic. He was able to verify exactly the descriptions given by several authorities, especially by MM. Auspitz and Basch and by M. Cornil, with regard to the histology of the pustules of variola. But in addition his attention was fixed upon the condition of the dermis at points corresponding to the pustules. Everything does not indeed consist in the modifications of the cells of the two layers of the epidermis, in the areolæ of the Malpighian layer, and in the presence of fluid filling these cells, and which contains a more or less considerable number of leucocytes, either free or included in more or less developed cells, and débris of epidermic cells, granular fibrine, and often some red blood-corpuscles. It does not even suffice to say, in order to be precise, that there was a multiplication of elements of the connective tissue of the dermis in the neighbourhood of the pustules. All the phenomena were not confined to this, since the superficial vessels of the dermis were more or less dilated. Some were filled with an enormous mass of red corpuscles, in the midst of which were perceived but few white corpuscles; others were almost exclusively filled with leucocytes, and were surrounded by innumerable anatomical elements of the same kind. These extravasated leucocytes became less and less numerous as the eye was directed to points more and more remote from the vessels which had supplied to them a passage. In the vascular papillæ corresponding to the seat of the pustules the vascular loops contained numerous leucocytes, and one could see them externally to these, not only in the papillary layer immediately contiguous to the deep surface of the layer of Malpighi, but also among the swollen, misshapen, and altered cells close to the dermis.

The accumulation of leucocytes was especially observed in the most superficial vessels of the dermis, but they existed also scattered here and there in vessels at some distance from the surfaces of the papillary body. In the cases of variola, as indeed in all hitherto enumerated, it could be readily made out that it was almost exclusively in the veins that this accumulation of leucocytes had taken place. In cases where the variola was of the hæmorrhagic form, extravasated red corpuscles of the blood could be seen more or less abundantly in the midst of the leucocytes.

These observations tend to demonstrate that the pus contained in the pustules of variola is constituted, as to its leucocytes, by the white corpuscles of extravasated blood which have travelled gradually along the

tissue of the dermis from the external surface of the vessels into the areolæ formed in the Malpighian layer. The leucocytes which are found accumulated in varying numbers in large cells are without doubt the white corpuscles of the blood which have penetrated by a kind of invagination and adhesive incorporation into the protoplasm of the epidermic cells; this presumption is supported by observations that have been made by Volkmann.

The facts given briefly in this paper, with those which have been made out by M. Hayem and those observed by M. Vulpian, when taken together with the results of investigations previously made by other authors, appear to be of such a nature as to show that the theory of Waller and Cohnheim upon the mechanism of suppuration ought to be substituted, at least in the majority of cases if not in all, for those ideas which have been hitherto promulgated on the mode of origin of the leucocytes of pus.

This theory allows one to comprehend, more readily perhaps than any other, the rapidity with which pus is formed under certain conditions. M. Vulpian has found in cases of wounds made experimentally, that the effused serum might already contain globules of pus at the end of the ninth hour. Again, it is known with what rapidity the so-called melastatic abscesses are sometimes formed.

Finally, the theory of the emigration of the leucocytes of the blood would acquire a still greater importance if ulterior researches should confirm the hypothesis maintained by some histologists in relation to the property attributed to the extravasated anatomical elements of being able to proliferate after they have been transported to a greater or less extent from the interior of the vessel which has allowed them to pass away, and thus to contribute to the development of normal and of morbid tissues.

Art. 25.—*On Relapsing Fever.*

By Dr. Broadbent.

(*The Lancet*, December 11.)

At the last meeting of the Harveian Society, an admirable clinical account of this disease, as witnessed during the last few months at the Fever Hospital, was read by Dr. Broadbent. After speaking of the nature, symptoms, and course of the disease, as exemplified anew in the existing outbreak, Dr. Broadbent made special reference to the phenomena attending the relapse, which occur with great regularity on the fourteenth day from the initial rigor, whether the febrile attack has been long or short, severe or slight, and are heralded by very definite alterations in the temperature, whilst the patient has been entirely free from subjective symptoms, not having the slightest headache, and eating and digesting a full meal. The rise in the temperature has often been as much as to 104°·8 F. under the circumstances.

The diagnosis of relapsing fever from typhus and enteric fevers turns mainly on the abrupt access and severe suffering of the former, and on the absence of the facies and rash characteristic of the latter. Some of

the more important symptoms were then examined by Dr. Broadbent in greater detail, and particularly the violent delirium which suddenly sets in in a few cases, and which may almost as suddenly subside. The phenomena of the interval also were considered, with reference to the question whether this period is a phase of the disease, or an interval of health, the author inclining to the former view.

The routine treatment pursued by the author was as follows: During the attack a fluid diet, acetate of ammonia every three or four hours, opiates if required in consequence of sleeplessness or pain, stimulants if specially indicated. In the interval, bark of quinine and iron, with full diet and beer, an aperient of some kind being generally required. In the relapse, it is usually necessary to go back to the milk and beef-tea; but some patients keep their appetite, and are allowed solid food. As a rule, the tonic is continued. Efforts have, however, been made to moderate the violence of the original attack on the one hand, and to prevent the relapse on the other, but without any great success.

Among the remedies employed for the first of these objects has been aconite, which has been found to reduce the frequency of the pulse and bring down the temperature in other acute diseases. No obvious effects have been obtained, the time being too short, and the duration of the pyrexia too variable. Alkalies in large doses only cause pain in the stomach. The wet sheet applied twice a day brings down the temperature one or two degrees, and sometimes relieves headache, but it does not appear to hasten at all the occurrence of the critical perspiration, and some patients object to it.

It has been attempted to prevent the relapse by a very liberal diet during the interval, and by endeavouring to break the fall from one extreme to the other at the crisis by giving beef-tea, milk, and stimulants, so that if the interval and relapse correspond at all to the swing of the pendulum, this swing might be checked. No definite results, however, have been obtained. Arsenic in full doses, and five or six grains of quinine three times a day, have been given through the interval without effect. Quinine, again, has been given in large doses (fifteen or twenty grains), the evening before the relapse became due, the result being, apparently, a postponement of the attack, and this having occurred in so many instances that it can scarcely be accidental. Up to the present, however, it cannot be said that the relapse may be prevented, or even rendered less severe. Experiments are still in progress for the purpose of ascertaining whether this result may be obtained by repeated large doses of quinine.

Art. 26.—*Cancerous Affections Successfully Treated.*

By E. A. Kunkler.

(*Pacific Medical and Surgical Journal.*)

Dr. Kunkler, in an extended article upon this subject, giving several cases which he had treated successfully, draws the following inferences: 1st. Cancerous affections are always the result of irritation, present or past, direct or sympathetic, single or multiple; and no cure can be

effected unless the causes, if still present, are ascertained and removed. 2. Inflammatory action in a cancer is the result of irritation; the severity of the first depends upon the intensity of the last; and tonic inflammation will subside with the cessation of the irritation, while atonic inflammation will continue, although the original irritation might have ceased, and consequently atonic inflammation must always be attended to. 3rd. Acute inflammation leads to suppuration, chronic inflammation leading to abnormal nutrition and induration of the affected parts, according to the degree of inflammation and the tissues involved. 4th. Scirrhous cancer is an aggravated induration by fibrinous deposits, causing obliteration of bloodvessels in the affected parts, whereby softening and mortification of these parts are occasioned. 5th. Encephaloid, colloid, and the fungoid forms of cancer are the result of various morbid processes involving different tissues and bloodvessels. 6th. The cell formations observed in some carcinomatous affections depend on perverted plasma, in which the cells are floating, from which they imbibe an abnormal nutrition. 7th. The offensive odour in the advanced stage of cancerous affections is the result of the decomposition of the animal tissues, whereby sulphuretted and phosphuretted hydrogen are formed. 8th. The destruction of the tissues in cancer is produced by the effect of these fœtid gases, especially by the sulphuretted hydrogen. 9th. To arrest the progress of cancer, the removal of the affected parts is sufficient only when the original irritation has subsided, and there is neither atonic inflammation nor induration in the neighbouring parts; but in all the forms of the disease proceeding from internal irritation, and from atonic inflammation and induration, no permanent cure can be expected unless all the pathological conditions are rectified, and the blood brought back to its normal standard.

Art. 27.— *On Sea-Sickness.*

By Fordyce Barker, M.D.

(*Medical Record*, September 15, 1869.)

At a meeting of the New York Medical Journal Association, Dr. Barker read a paper upon sea-sickness. He began his discussion of this affection by a rapid review of the various theories that have been held concerning it. Semanas charged it to miasma generated in the confined air of the ship; but it was suffered equally in open boats. Darwin thought it occasioned by the sight of objects always in motion; but the blind were no more exempt from it than the seeing. Keransaen regarded it as resulting from agitation of the abdominal viscera; but riding, jumping, gymnastics produced no such result. Wollaston considered it due to vascular engorgement of the brain, mechanically produced; but the symptoms of sea-sickness were quite different from those of congestion. Bellarin held that the sudden movements of the body decreased the ascending force of the blood, resulting in sudden anæmia of the brain; this, through the sympathetic system, excited vomiting, which refilled the cerebral vessels. Sper, Gilchrist, Marsh, and Fonsagrives ascribe sea-sickness to cerebral commotion from oscil-

lation. A. Jobert looked upon it as an indigestion produced by physical interference with the peristaltic action of the stomach. Chapman, whose claim to cure the malady by the application of ice-bags to the spine had drawn attention to his views, held that its proximate cause was congestion of the nervous centres along the back, especially in those segments of the cord related to the stomach and the muscles concerned in vomiting; this congestion being due to the slight concussions of the brain against the base and roof of the skull, in the alternate rise and fall of the body; to the slight jerks, similarly produced, upon the lateral ligaments suspending the spinal cord; and to the more or less violent movements of the abdominal and pelvic viscera.

Some of the above theories the speaker deemed misty and obscure, others fanciful and absurd, others again positively false, and none satisfactory. His own view, which he stated with modesty, was that sea-sickness is "due to the sudden and recurring changes of the relations of the fluids to the solids of the body, and the nervous disturbances which result from these changes." The alternate movements of ascent and descent produce "alterations of afflux and delay in the arrival of the blood to the different organs of the body, which disturb their functions, and those of the brain especially," with results analogous to the nausea and vomiting which some persons experience after venesection.

Persons differ greatly in the symptoms of sea-sickness, as well as in the susceptibility to it; and the same is true of the lower animals, which are also subject to the malady. With some persons headache is the prominent symptom; with others, intense nausea; with others still, simple vomiting without nausea or other distress. With most, their troubles cease after a few days, but some unfortunates can never become accustomed to the sea. Even in the worst cases, a strong mental emotion, such as terror, will often effect a sudden respite, if not a cure.

It is a popular error that sea-sickness is often beneficial, and never permanently injurious. Of itself, it is probably almost never helpful, and the benefit from a voyage is commonly in proportion to the freedom from sea-sickness. That it may result in serious and permanent injury, there is no question; and, though rarely fatal, yet more deaths are to be charged to it than might be supposed. The speaker had met with three in his own experience.

There are no specifics for sea-sickness; the land is the only sure prophylactic, and the horizontal posture the nearest approach to a cure. But though drugs are useless, hygiene may do much towards averting the evil or mitigating its worst features. These are often due to previous exhaustion, from the fatigue of travel, with bad ventilation and want of regular sleep and food; or from the excitement incident to preparations for departure. And frequently this exhaustion is aggravated by a violent cathartic, taken to clear out the bile, that is supposed to be responsible for all the suffering—how absurdly need not be said. Select, then, a well-ventilated state-room on the sunny side of the steamer, as central as possible, but away from the furnaces. Have all preparations made so as to secure a full day's rest before starting. Eat as hearty a meal as possible within two or three hours before going on board. Be early enough aboard, to arrange everything that may be required for a day or two; *go to bed before the vessel gets under weigh;* and stay there

a day or two, or until you feel that the danger of sickness is past. Eat regularly and heartily, but *without raising the head.* On the first night out take some mild laxative, such as two or three compound rhubarb pills, to obviate the constipation to which most persons are liable at sea. (But avoid cathartics before starting. Effervescing laxatives in the morning are bad in this affection.) After having become accustomed to the sea and able to be out on deck, never rise in the morning until you have eaten something, as a bowl of porridge, or a sea-biscuit with a cup of coffee. Lastly, if rough weather comes on, don't attempt to brave it, but go to bed before getting sick.

With regard to the effect of Chapman's ice-bags, Dr. Barker had made particular inquiries in England and France of many physicians and others who had used them, and found the bulk of testimony against their value. Some deemed them not only useless, but harmful, from causing nervous depression. He inquired if any one present had seen fatal results from sea-sickness.

Art. 28.—*Hæmorrhagic Malaria.*

By L. Michel, M.D.

(*New Orleans Journal of Medicine.*)

Dr. L. Michel (*N. O. Journal of Medicine*) in an elaborate article describes a disease peculiar to the Southern States, and which was first described in 1867. It is a disease due to malaria, and is ushered in by a chill of the congestion type, followed by high fever, parched mouth, extreme thirst, suffused eyes, restlessness and anxiety, sighing respiration, quick bounding pulse. During the febrile manifestation nausea and vomiting are extreme. The patient vomits a dark grumous bile. After the nausea has continued five or six or more hours, jaundice and bloody urine show themselves. The suffused eyes now become instantaneously yellow, and the red skin changes to a bronzed yellow. With the hæmaturia we have pain in the back, well defined in the region of the kidneys. The tongue varies in appearance from a pale milky colour to a straw colour, and skin dark brown. After a time a remission occurs, in which there is a decided abatement in all the symptoms, except the nausea and vomiting. During the remission the skin is frequently less yellow, and the urine becomes clear and limpid, only to reassume its bloody colour upon the invasion of the chill. The skin frequently becomes permanently dark-bronzed, and the face, chest, and abdomen studded with profuse hæmorrhagica and vibices, and should a blister be applied, the cuticle will be filled with bloody serum. The bowels are usually constipated, though sometimes there are copious dejections of dark, tarry, feculent matter. The mind is usually clear. It mostly runs its course in from four to twelve days. Autopsies reveal extreme rigor mortis. Muscles very red. A yellow colour pervades the brain, chest, and abdominal organs. Stomach filled with dark grumous bile. The spleen much enlarged, and hard and solid. Kidneys enlarged, and presenting the appearance of passing through severe inflammatory action. Treatment best adapted for this disease is, first of all, to give

large doses of mercurials, followed by oil, and after the bowels are moved to give large doses of quinine, with capsicum, until the quinine has produced a decided impression. For the hæmaturia, astringents with opium may be given.

Art. 29.—*Influence of Nutriment on Disease.*

By Dr. Salisbury.

(*Medical Record,* November 1, 1869.)

The *Journal Central de Médecine de Berlin* publishes *seriatim* the conclusions arrived at by Dr. Salisbury from a large number of experiments on this subject. They are as follows :—

1. The continuous use of vegetable aliments, particularly of the leguminous and amylaceous plants, provokes constipation and a sort of scorbutic condition.

2. The use of amylaceous plants causes a great variety of morbid conditions ; for example, fibrinous deposits and embola in the capillary vessels, and congestion, inflammation, diarrhœa, and paralysis, as the result, and, at a later period, tuberculous deposits in the lungs, affections of the eyes and ears, and pains in the back and extremities.

3. These symptoms may be advantageously met by having recourse to albuminoid aliments of animal origin, and especially by the use of salts of potash and iron, which prevent coagulation of fibrin, favour the circulation of the blood, and render active absorption and intestinal secretion.

4. The morbid states which we have enumerated are developed in armies on the field, especially when they are subjected to an amylaceous dietary.

5. The officers, who have the privilege of varying their diet, are free from these accidents.

6. When the nutriment is exclusively amylaceous or saccharine, constipation soon appears, and stomachic digestion is effected with difficulty.

7. This constipation is not slow in engendering the products of fermentation, intestinal gases, and parasites in great number.

8. This condition continues until diarrhœa sets in, and then small colloid gelatinous masses are found in the fæces in variable quantity.

9. These are in no respect the cause of the diarrhœa ; they result from the production and metamorphosis of saccharine and fermentive matter. Once produced, these substances act as a true poison on the organism, and aggravate the intestinal lesions.

10. It is specially in the evening and during the night that the products of fermentation are developed in the intestines. Each day they increase. The continual excitement of the intestinal mucous membrane by the gases and parasites produces diarrhœa, which soon becomes chronic, and resists all methods of treatment.

11. This state is always accompanied with a tendency to paralysis, and by singing in the ears and violent headache, symptoms which are attributable to defective nourishment and to the presence of fibrinous masses in the capillary vessels.

12. There are often at this stage symptoms of bronchitis. The expectoration is thick, yellow, principally at night, and it is complicated with dyspnœa and palpitations.

13. Diabetes and strumous affections often supervene on a diet exclusively saccharine or containing too much starch.

14. The diarrhœa, characterized by colloid greenish stools, which attacks children during the summer, depends on the abuse of saccharine substances and fruits, and the colloid masses are derived from the intestinal epithelium.

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 30.—*An Inquiry into the Nature, Origin, and Treatment of Hysteric Disease.**

By ROBERT LEE, M.D.

(*Medical Times and Gazette*, April 2.)

In the first part of this paper, the author gave an elaborate review of the history of hysteric diseases from the earliest ages to the present time. The opinions and methods of treatment adopted by Aretæus, Galen, Celsus, Sydenham, Hoffman, Cullen, and the most eminent writers of the present century, were given in detail. Respecting hysteria in the male sex, the author stated that he had never seen a genuine example; but in the female sex, a great number—a greater number than it was possible for him to state. An accurate report of upwards of two hundred of these cases accompanied the communication. If these histories were examined, the author stated the following conclusions might be drawn. In none did the disease occur before the age of puberty, and in few after the middle period of life. In few of the cases recorded were the functions of the ovaries and uterus in a perfectly healthy state. In the greater number there was amenorrhœa, dysmenorrhœa, menorrhagia, leucorrhœa, or a morbid state of increased or diminished sensibility in the uterine organs, without any organic disease. The author added that, in the greater number, there was incurable sterility; and he stated that he had been led to conclude from the symptoms observed in these cases that hysteria originates in the ovary, on which menstruation depends, in which conception takes place, and to the influence of which are to be attributed the development of the female pelvis and mammæ, and all the peculiarities of the female constitution. The result of the author's dissections of the renal ganglia and nerves, and those of the ovary, now in the museum of the university at Cambridge, were given; and from them an explanation was given of the cause of the discharge of a great quantity of clear urine after the hysteric paroxysms. Other seats of hysteria were then described, with a letter on the subject from Mr. Joseph Swan. The paper con-

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* Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, March 8.

cluded with a summary of the different remedies employed in the two hundred cases; the two last of these methods of treatment were clitoridectomy and cutting away the coccyx.

Dr. Schulhof said that, in a large number of hysterical patients whom he had examined, in nine out of ten he had found the spine not perfectly straight. There was not visible deformity; but the displacement was sufficient, he thought, to produce pressure on the ganglia.

Mr. Barwell could not agree with Dr. Schulhof's view, seeing that in very many cases of well-marked spinal deformity, where (especially in angular curvature) pressure on the nerves would be expected, hysteria was absent.

Dr. Buzzard had, from his observations at the Hospital for the Paralysed and Epileptic, been led to divide hysteria into several classes. One class was represented by young women who, without disorder of the uterine functions, were paralysed in one or more limbs. In these cases, he thought the disorder of mental origin; it was best treated by acting on the imagination or attention. Next, there were the cases presenting the well-known hysterical symptoms. And finally, there were the hysterical fits or seizures, which it was difficult to distinguish from epileptic attacks. The idea of hysteria in Dr. Lee's paper was too limited; it did not take in hysterical convulsions. He doubted whether it was quite correct to refer all cases of apparent paralysis to hysteria; another term ought, perhaps, to be adopted for these.

Mr. Hovell said that the term hysteria was too loosely applied, and ought to be restricted to disorders arising from uterine irritation. He would suggest the term "emotional susceptibility" for many of those conditions which were described as hysteria; and this would coincide with the opinion of the late Sir B. Brodie. Hysteria was, he thought, referable rather to mental or moral shock than to uterine irritation; and this would account for its occasional occurrence in men. The shock probably acted on the sympathetic nerve; and hence arose the palpitation and flushing of the face; and the paralysis (or more properly paresis) would be accounted for by the disturbance of the nutritive function through the vaso-motor nerves.

Dr. Wynn Williams said that the term hysteria seemed to be made to include all diseases that people could make nothing of. Ovarian mischief would no doubt cause hysterical symptoms in some cases; but in many these depended on uterine displacement, with which indeed the ovaries often sympathised. The replacement of the uterus would remove the symptoms.

Dr. Barclay did not think that hysteria was so often connected with uterine affections. There was no form of uterine or of ovarian disease that might not exist without hysteria. He was surprised that Dr. Lee should regard the ovaries as the origin of hysteria; he had seen cases in the male which he should regard as hysterical. He believed that hysteria depended on a peculiar mental and nervous organization, dependent on sex in the same way as were the modifications in the osseous and other structures. The hysterical symptoms connected with the uterus could not, he thought, be formed into a class separate from those arising from derangements of other organs.

Mr. Holmes was not sure that Dr. Lee laid down absolutely that

hysteria depended on the ovaries. He appeared to refer in his paper to hysteria arising from other sources, such as irritation of the nerves at the neck of the uterus.

Dr. Barnes agreed with Dr. Lee as to the connexion of the ovaries with hysteria. The term hysteria was applied when the uterus was supposed to be everything—when it was said that "Mulier est propter uterum." Within the last thirty or forty years, it had become recognised that the ovary was the source of the physiological changes in the female. No doubt it had the power of evoking nervous phenomena. The first attacks of hysteria came on with menstruation, and in many instances it attended the menstrual epochs. Disturbed ovarian function attended many cases of uterine disease. If the physiological flow of blood to the sexual organs could not be relieved through the uterus, nervous symptoms would set in. Treatment directed merely to the nervous system might fail; the connexion between the uterus and ovaries should be remembered, and the uterine disorder treated, if one were found to be present.

Art. 31.—*Acute Hysteria in the Male—Treatment by Hypodermic Injection of Morphia.*

By Julius Althaus, M.D., M.R.C.P., Physician to the Infirmary for Epilepsy and Paralysis.

(*Medical Times and Gazette*, April 9.)

The following case is related by Dr. Althaus:—"In July, 1868, I was called to see a young gentleman, aged twenty-three, who had, as I was informed, been suffering from 'brain fever' during the last three days. His friends gave me the following history:—About a week ago he received a letter informing him that a young lady to whom he was attached had engaged herself to another gentleman. On receipt of this news he flew into a violent rage, and smashed a good deal of glass and china which happened to be on the table. He then began to talk about the frailty of women, indulging in most sarcastic remarks on the sex in general. Two days afterwards a friend took him to Richmond for a change. The whole of that day he was silent and morose, and returned in the evening in very bad humour. During the night he again became violent, and broke several pieces of furniture. Next morning, about 9 o'clock, he had a severe convulsive attack, in which he bit his tongue and foamed at the mouth, the limbs being considerably distorted for about fifteen minutes consecutively. After the attack he was exhausted, and remained so for about a quarter of an hour, when a similar paroxysm occurred, which was followed by many others in the course of the day. In all these attacks consciousness was not entirely lost. Between the fits he would either lie quietly in bed, or suddenly jump up, roll about the floor, and try to strangle himself, or to smash furniture. A medical practitioner was called in, who prescribed five grains of bromide of potassium several times daily. On an attempt being made to give him this medicine in a wineglass, he ground the glass to pieces between his teeth, and it was believed that he had swallowed some pieces of it. I saw him the day after, at 5 o'clock P.M., when I found him in much the same con-

dition as just described—viz., occasionally seized by convulsive attacks, half-conscious and violent. He would not answer any questions. There was evidently no meningitis, as the pulse, the skin, and the pupils were in their normal condition. Under these circumstances, I looked upon the case as one of acute hysteria, caused by sudden and severe mental emotion. As it was impossible to make the patient swallow any medicine, I rapidly injected, during a temporary lull in his strugglings, half a grain of acetate of morphia into the cellular tissue of the forearm. Five minutes afterwards he was perfectly composed. In fifteen minutes he went to sleep, and slept for five hours consecutively. He then awoke, and was violently sick several times, although he had eaten nothing for two days. He got out of bed next morning about 10 A.M., and was quite calm, making no allusion to what had occurred. I saw him again at 5 P.M., and as there were then slight symptoms of restlessness returning, I repeated the injection, but used only one-sixth of a grain, the patient not offering the least resistance. The next day I was informed that he had had a good night's rest, and was perfectly rational and collected. I saw him again (not professionally) six weeks afterwards, when, in answer to my inquiries, he said that he was quite well, and never alluded to his having been ill. Some months ago I heard from his friends that he had continued in excellent health ever since, and was engaged to be married, having quite dismissed from his mind all thoughts of his former attachment.

"I will only add that I generally, in cases which require the subcutaneous administration of sedatives, use one part of atropia to twelve parts of morphia, in order to counteract the sickness and vomiting; but in the case just recorded I thought it best to utilize the vomitive effects of morphia simultaneously with its sedative action."

ART. 32.—*Hysterical Aphonia.*

By F. H. TANNER, M.D., M.R.C.P.

(*Medical Press and Circular*, December 29, 1869.)

Dr. Tanner says that he never fails to cure this obstinate nervous disease by means of electro-magnetism. He places the patient in a chair, gives her one handle of the instrument moistened into her hand, and with the other touches the tongue. The patient then screams out violently, and thus convinces herself and friends that she has *not* lost her voice.

ART. 33.—*Clinical Facts in reference to Chorea.*

By Professor STEINER.

(*Der praktische Arzt.*, November 9, 1869.)

Professor Steiner maintains that chorea must be regarded as originating in spinal irritation, which may be occasioned by anæmia, by hyperæmia, by serous effusions and extravasations of blood, and lastly, by neoplastic formations and organic changes occurring in the spinal cord

itself, and in its membranous and osseous coverings. These conditions may be of traumatic origin, or may be consequences of acute rheumatism, or finally, may result from anomalous processes of growth and development. The Professor had opportunities of making post-mortem examinations of three choreic subjects. The first resulted from a wound, and he found increase of growth in the connective tissues and an anæmic condition of the spinal cord, the spinal canal containing much serous fluid; in the second case he found a considerable degree of hyperæmia in the meninges and of the substance of the spinal cord, with serous effusion into the canal; and in the third case, which had been the subject of articular rheumatism, he found pericarditis and endocarditis, as well as inflammatory exudation into the canal of the spinal cord.

Anæmia of the spinal cord is the condition which the Professor believes to be most frequent, accompanied by certain anomalous processes of growth and development, since in fifty-two cases of the disease the ages of the sufferers were from six to eleven. According to the nature of the changes, the choreic symptoms are slight or severe, unilateral or bilateral, curable or incurable. Among the fifty-two cases forty were female, twelve male. When spinal irritation is already present, the attack of chorea may be induced by psychical causes, as fear, fright, &c., or by certain mechanical causes, as blows, falls, &c. The usual duration of the disease is from four to nine weeks, but relapses are frequent.

In regard to the treatment of the disease, Professor Steiner holds that chorea in the majority of cases cures itself, though there are other cases which resist every remedial means. Certain remedies, however, ameliorate and shorten the duration of the disease in the first class of cases. In view of the anæmia so frequently present, Professor Steiner orders iron, either alone or in combination with oxide of zinc, as in the following prescription: Ferri carbon. saccharati, 2 parts; zinci oxyd. 1-25 part; sacch. alb. 8 parts; M., ft. pulv. t. d. sumen. The diet should be easily digestible and abundant. If, after the employment of the iron for a fortnight, no improvement occurs, the Professor resorts to the preparations of arsenic, by which the disease is often quickly and certainly cured, the general nutrition of the body and the appearance being at the same time much improved. He usually commences with one drop *per diem*, and increases the dose after three or four days to two, three, four, and five drops, and then, if improvement have resulted, withdraws the remedy in the same gradual way. Cold water, applied hydropathically, is sometimes very serviceable. If the disease owes its origin to rheumatism, the remedies appropriate to that diathesis must be administered. The subcutaneous injection of arsenicum, sulphur, chloroform, and morphia, furnishes no satisfactory results.

Art. 34.—*Contributions to the Pathology of Chorea.*

By Henry M. Tuckwell, M.D. Oxon.

(*St. Bartholomew's Hospital Reports,* vol. v.)

Dr. Tuckwell, who is a supporter of Dr. Kirkes' views in regard to the frequent dependence of chorea upon embolism of the cerebral

arteries, finds them entirely confirmed by the history and results of the autopsy of the case of fatal chorea, which he reports.

The following extracts are taken from notes made at the autopsy: "The brain was well developed and presented nothing abnormal in its coverings or surface. The upper half of each cerebral hemisphere was carefully sliced down to a level with the corpus callosum, and the lateral ventricles were opened without any trace of softening being detected in either the grey or white matter of this part. The corpus callosum and fornix were firm and healthy. No excess of fluid in the lateral ventricles. The brain was now turned over, and the cerebral arteries were carefully followed up by dissection to their smaller branches, without any evidence of obstruction in any part of their course. But on tracing out the posterior cerebral artery, and thereby displacing the middle cerebral lobe, it became manifest that the under part of this lobe on the right side was in a state of softening. This softening was not excessive, but easily recognisable; it had not, apparently, affected the very surface of the convolutions, but involved the deeper layers of the cortex, and more especially the subjacent white substance, extending upwards into the neighbourhood of the corpus striatum and optic thalamus, which ganglia lay, as it were, imbedded in a nest of softened cerebral matter. The softened tissue was redder than the surrounding healthy white substance, this red tinge being especially pronounced in the deepest layer of the cortex. The corpus striatum was, seemingly, not itself affected. The optic thalamus was encroached on at its under and outer aspect by the disease, but was in the main firm and apparently natural. . . . . A microscopical examination of the fresh brain-tissue showed that in those parts, which to the naked eye appeared soft, many of the small bloodvessels were dotted along their walls with minute granules scattered and in clusters. In the firm, healthy looking brain-tissue no such appearance could be detected. . . . . The mitral valve, looked at from its ventricular aspect, seemed perfectly competent, and presented no unusual appearance; but examined from its auricular aspect, by opening out the left auricle, it was altered as follows. A line of numerous, bright, clustering, warty vegetations, some as large as a pin's head, others so minute as to be only just visible to the naked eye, and that in a certain light, but shining like little white beads when slightly magnified, extended in a sinuous course all along the free margin of each cusp. In two or three places these little groups appeared to have been shed off, for they hung only by a fine pedicle to the line of attachment, and clung close to the chordæ tendineæ."

Embolic patches were, moreover, found in the kidneys.

The condition of the heart above described also existed in the case reported by the author in the *British and Foreign Medico-Chirurgical Review* for October, 1867, and he believes that it is one of the most frequent lesions in this disease. Dr. Hughlings-Jackson and Dr. Broadbent have both adopted the theory of the embolic origin of chorea, and have located the exact seat of the disease; the former in the nerve tissue forming the convolutions near the corpus striatum; the latter in the sensori-motor ganglia, themselves, and both hold that the chorea arises from the irritability or disordered nutrition of these parts, which results from the shutting off of their due supply of blood, and as a similar con-

dition of the cerebral hemispheres will produce delirium, so chorea may be regarded as a delirium of the sensori-motor ganglia. If the disturbance of nutrition be carried still further, it results in paralysis, and it will be remembered that paralysis frequently alternates with choreic convulsions. Dr. Broadbent, while he insists upon embolism as the usual cause, says, that as the sensori-motor ganglia are the seat of the disease, anything which produces disturbance in their nutrition will give rise to it, and it may therefore occasionally depend upon peripheral irritation, producing disordered nutrition of this part of the brain.

Dr. Tuckwell, in corroboration of his opinion that the condition of the valves found in the case which he reports, is a frequent one in chorea, refers to a paper by Dr. Ogle, and which contains the histories of sixteen fatal cases, in ten of which fibrinous concretions were found on the valves, and in eight of these ten on their auricular surface. Dr. Broadbent meets Dr. Ogle's objection that in cases of "acknowledged capillary embolism, chorea has not been present, but rather the symptoms and post-mortem appearances of pyæmia and gangrene, with the reply that the condition of the heart which gives rise to the symptoms of pyæmia, is not that found in the choreic heart. "In the former we see a process of disintegration and breaking down of the valves going on, so that the degenerate débris, which passes into the circulation, acts evidently on the blood like the putrid fluids from a surgical wound, and death follows rapidly from pyæmia. In these cases are found, here and there—it may be in one organ only, as the kidney or spleen—emboli of various sizes, while the general appearance of the internal organs is just that which is met with in blood-poisoning. But how different is the choreic heart. Here there is no process of disintegration in the valves, but a collection of fresh vegetations which can do no more than act mechanically or as irritants."

Dr. Barnes is another opponent of the embolic origin of chorea, and asks the question: "Do you make a distinction between fatal and non-fatal cases? If you don't, you must allow that embolism is a very frequent and benign affection, which in the great majority of instances recovers." This Dr. Tuckwell answers by saying, that many of the cases which get well may be of reflex origin, and that he sees nothing improbable in the recovery of cases from embolism, inasmuch as cases of hemiplegia from embolism may and do recover. Dr. Tuckwell also holds that rheumatism is generally the cause of the condition of the valves which gives rise to chorea, and that this is especially true of children, and says that the reason that the pre-existence of rheumatism is not more clearly made out, is simply that, in many cases, rheumatism occurring in children presents certain anomalies which prevent its recognition. Thus there is in young persons an absence of great pain in or swelling of the joint, and of the profuse sweating which characterizes the disease in adults. Chorea, moreover, occurs most frequently in those who are most exposed to the causes of rheumatism, namely, the poor, while it is comparatively rare among those who are in comfortable circumstances.

Art. 35.—*A Case of severe Chorea during Pregnancy successfully treated with Hydrate of Chloral.*

By James Russell, M.D., F.R.C.P., Physician to the Birmingham General Hospital.

(*Medical Times and Gazette*, Jan. 8.)

The following case exhibits very strikingly the beneficial influence of chloral in controlling the movements of severe chorea, and in affording the patient the benefit of prolonged sleep:—

"E. M., aged twenty-one, a healthy, vigorous-looking young woman, was admitted into the Birmingham General Hospital on October 29. She was nearly five months advanced in pregnancy with her first child. Choreic movements developed themselves from an unusually early period of gestation, almost from the beginning. It was asserted by her husband that she exhibited some irregular movements of the hands before marriage, but this assertion the patient most positively negatives. For the last three weeks, and especially for the last fortnight, the movements have become very violent, so that she was quite unable to stand, and was confined to her bed. They commenced in the left arm, and subsequently became general. Her eyes were 'set,' and the globes often 'worked.' She had difficulty in opening her mouth, and the masseters were observed to twitch. She quite lost the power of articulating, though she retained that of swallowing. Her sleep was also very much disturbed. She had never suffered from rheumatism, though a sister had been laid up with rheumatic fever. Her heart was healthy, her urine was free from albumen.

"At admission she presented a very aggravated form of chorea, the limbs and trunk being tossed at intervals with frightful violence; articulation was practically extinguished, but she swallowed fairly; the pupils were contractile and of medium size; her mind was clear, but she was exceedingly emotional.

"Full doses of bromide of potassium failed entirely, and her first night in the hospital was passed with only an hour and a half of sleep. At noon on October 30, Dr. Welch, our house-physician, administered the hydrate of chloral, and during the ensuing twenty-four hours she took seven doses, the first two of ten grains, the succeeding ones of fifteen. The first two doses procured some sleep, but after the third the sleep became more continuous, lasting successively for three, five, and three hours and a half. Whilst she was awake, the movements, though occasionally violent, were much lessened, and she spoke distinctly: she was also able to protrude her tongue; she took liquid food.

"Thirty grains of chloral at 6 P.M. on the 31st were followed by two hours' sleep, but pain, seated apparently in the uterus, kept her awake during the remainder of the night; the movements returned in the morning with much violence, chiefly in the trunk and extremities, speech was again interrupted, and she became much excited. Nutritive enemata were now ordered on November 1, each containing six grains of quinine, with cod-liver oil: and two doses of tincture of opium, of thirty and forty minims respectively, were also administered by the rectum,

the chloral being suspended. Although she was quiet during November 1, the smallest excitement threw her into instant convulsion, and during the night, though feeling a great desire to sleep, she was unable to close her eyes. The uterine pain subsided.

"On November 2, after twenty grains of chloral at noon, she slept with little intermission till 9 P.M., when the dose was repeated, and she slept through the whole night; she told us next morning that she had enjoyed more sleep during that night than she had through the entire preceding month. She was almost perfectly quiet; her pupils were of medium size and contractile. Pulse was 104. She laughed and was in good spirits, but complained of inability to chew. She again took two doses at 5 and 9 P.M. of November 3, and slept from the former of these hours until 2 A.M., with one interval of an hour and a half. We found her in the morning perfectly quiet, though a little fidgety and her speech completely restored.

"The same treatment on the evening of the 4th procured ten hours of nearly continuous sleep, and the sleep continued through most of the following day. She now began to feed herself. The following night (of the 5th) the remedy nearly failed to give sleep; but on the 6th a single dose was perfectly successful. On the 7th no chloral was given; the night was sleepless. A single dose on the evening of the 8th gave sleep through the entire night, and next morning she carried liquid food to her mouth, talked well, and protruded her tongue perfectly.

"The chloral was discontinued on November 10. She had begun to walk, though in a very imperfect manner until November 25. She took every four hours fifteen minims of the tincture of hemp; she steadily improved in walking, and had good nights. From the 18th she began to sit up, and from December 3 spent a considerable part of the day out of bed, walking with fair facility, talking naturally, and presenting only the usual characters of a mild attack of the disease. She had emaciated partly, but otherwise was in good health. She left the hospital on December 10, presenting only the symptoms of a mild attack of her disease."

ART. 36.—*Trophic Disturbances in Neuralgia.*

By M. NOTHNAGEL.

(*The Lancet*, February 12.)

M. Nothnagel contributes a paper to Griesinger's *Archiv für Psychiatrie* on this subject, in which he gives the details of two cases of sciatica, in which, besides the ordinary symptoms, there were well-marked evidences of vascular contraction or cramp occurring coincidently with the attacks of pain. The condition was favourably influenced by warmth, unfavourably by cold. He then proceeds to discuss the cause of the emaciation of the extremities which so often follows neuralgia when protracted. The ordinary statement that it results from the condition of rest and immobility, into which the leg naturally falls on account of the pain, is no doubt correct in many cases, but it does not explain it in all; for sometimes, notwithstanding the pains are of a violent and

persistent character, no atrophy is observed, whilst in others atrophy occurs though the pain is so slight as not to incapacitate the patient from using the limb. Now, M. Nothnagel considers we have no right to assume the presence of any disease of the so-called trophic nerves until the existence of these nerves has been demonstrated. According to his observations, made on thirty patients affected with sciatica, of whom five suffered from atrophy, and four of these were complicated with vascular cramp, he believes he is justified in concluding that in the greater number of cases the atrophy accompanying neuralgia may be referred to coincident affection of the vascular nerves. It is impossible to doubt that, so far as these nerves influence the diameter of the arterial tubes, they must modify the phenomena of nutrition. And since the trunk of the nerve is probably in most instances the seat of the disease, it is not surprising that its effect—an insufficient supply of blood—should be perceptible, not only in the skin, but in the muscles, which form so large a proportion of the mass of the limb.

That we have here a co-ordination of vaso-motor and sensory phenomena, and that the latter is not a consequence of the former, as in other vaso-motor neuroses, follows from the circumstance that the pains in sciatica pursue definite nerve-paths; that they are extremely violent, which is not at all common in angio-neuroses; and that they are not relieved by exercise, which increases the activity of the circulation. The difficulty of explaining how periodic vascular cramp can occasion atrophy is met by M. Nothnagel, firstly, by the statement that in the early stages of the disease the pains are both violent and continuous; and secondly, by a reference to the experiment of Stenson, in which it is shown that the effects of arterial compression do not immediately disappear when the pressure is withdrawn. M. Nothnagel remarks, in conclusion, that he observed vascular cramps in no other cases than in those with which atrophy of the limb was associated.

Art. 37.—*The Morrisonian Lectures on Insanity.*

By Dr. Arthur Mitchell.

(*British Medical Journal*, March 19.)

The last of the course of Morrisonian Lectures by Dr. Arthur Mitchell was delivered in the Hall of the Edinburgh College of Physicians, before a very large audience. The subject treated was the influence of the diseases of early life on the production of insanity. These the lecturer considers to be the most fruitful causes of idiocy and imbecility. Not more than thirty per cent. of the idiocy in this country has an intra-uterine origin. The diseases of childhood not only produce idiocy and imbecility, but they indirectly cause a large amount of the insanity of later life. They injure the whole constitution. They enfeeble the power to resist adverse influences when these occur. They originate predispositions to disease generally, and strengthen inherited predispositions. In an especial manner they are apt to leave injurious effects on the nervous centres, even when they do not at the time so derange them as to cause positive states of disease. The three diseases which

do most harm are scarlet fever, measles, and whooping-cough. To extirpate these would be a blessing to mankind beyond all weighing. To do nothing more than diminish their frequency would repay any efforts, since it would also diminish, not bodily suffering and disease only, but madness, vice, unproductiveness, poverty, and sorrow. In alluding to the other causes of idiocy, Dr. Mitchell gave the details of a most affecting case which occurred in his own experience. "A healthy, well-nourished boy, nearly two years old, was lying in his cradle when a cock perched on the hood. The boy was at first amused and delighted, and made vain efforts to reach the bird with his hands. These signs of delight, however, began to grow less evident; the child ceased to smile, but his attention continued to be intently fixed on the animal, which in its turn appeared to become interested in the child. Up to this point the little fellow gave no sign of terror: but there was something like it, though still unexpressed, when the cock, stretching his neck, put his head down and looked closely at the boy's face; and when, raising his head again, he flapped his great wings and uttered a shrill cry, the child gave one sharp cry of pain and was instantly convulsed. Three or four fits occurred during that and the next day, but never again. The boy, however, grew up an idiot."

Art. 38.—*On the Treatment of Paralysis.*

By A. D. Rockwell, M.D., of New York.

(*The Medical Record*, December 1, 1869.)

In a paper read recently before the New York Academy of Medicine, "On the Treatment of Paralysis by Electrization," Dr. Rockwell sums up the leading ideas advanced, as follows:—1st. Paralysis is not a disease, *per se*, but is merely a symptom of some disturbance of the central or peripheric nervous system. The treatment of paralysis should have reference not alone to the affected parts, but also to the general condition of which it is the result, or with which it is associated. 2nd. Paralysis—throwing aside the toxic, traumatic, and local varieties—is pre-eminently a symptom of exhaustion or weakness of the nervous system. It occurs most frequently among the cultivated and intellectual. It is a malady of the two extremes of life—infancy and old age. 3rd. The two cardinal principles of treatment of paralysis are, in the first place, to administer remedies directed to the removal of the cause, that is, the condition of the system, or the local injury of which the paralysis is a symptom; and, in the second place, to restore the tone and nutrition of the affected parts. The first condition is met by the administration of strychnia (internally or hypodermically) when the central nervous system is anæmic; in the use of iodide of potassium, ergot, belladonna, and bromide of potass, when the spine or brain is congested or inflamed; and by the use of general tonics, such as bark, iron, phosphorus, arsenic, and oxide of zinc. The second condition is met by rubbing, shampooing, &c. Electrization, general or localized, with the varying use of the galvanic or Faradic currents, fulfils these indications better than any other method of treatment. It benefits paralysis by virtue of its tonic effects

on the nervous and muscular system. 4th. In the treatment of paralysis by electrization, the distinction between the effects of the galvanic and Faradic currents *is of radical and indispensable importance.* An intense, penetrating galvanic current, from 50 or 100 cells of Chester's air-tight battery, will overcome far greater resistance than the Faradic; will produce muscular contractions in paralysed limbs when the Faradic is powerless, and will also more directly and positively affect the great sympathetic. 5th. Fresh recent attacks of a local character are sometimes very quickly relieved and cured by the Faradic current alone; but long-standing and severe cases, that constitute the majority, demand the varying and persevering use of both the galvanic and Faradic currents for weeks and months. 6th. The prognosis is far more favourable than is commonly supposed. During the past two years he has treated by electrization, general and local, and by the varying use of the Faradic and galvanic currents, seventy cases of paralysis, resulting from a variety of causes, and manifesting itself in different parts of the body. Of these 70 cases, 16 were supposed to result from cerebral effusion, causing hemiplegia; of this number 11 suffered from paralysis of the right, and 6 of the left side; 3 of the cases were approximately and 2 completely cured; 3 were very markedly benefited; 3 discontinued treatment after a few visits; in 3 cases only slight amelioration was evident, while 2 failed to receive any benefit whatever.

Four cases of complete facial paralysis, 2 of which involved the right side, 1 of the left, and 1 both sides of the face.

With the exception of the case involving the 7th pair on either side following syphilis, they were all quickly and completely cured. Anæsthesia occurred 20 times. In 9 cases the cure was complete; 9 were approximately cured, while 2 discontinued treatment before any result could be seen. Four cases of complete paraplegia: 3 of which received no benefit whatever, while 1 was approximately cured after a protracted course of treatment. One of the patients died while under treatment.

Eight cases of infantile paralysis, probably of a reflex character. Four of these patients were completely and rapidly cured, and 2 were approximately cured, while 2 received no benefit whatever.

Twelve cases of paralysis were treated, each of which involved but one limb of the body. One of these was approximately, and 5 completely cured; 4 derived marked benefit, while 2 discontinued treatment before any result was noticed.

Four cases of palsy agitans, but in one case only did Dr. Rockwell succeed in obtaining even a slight amelioration of the symptoms. Writer's cramp occurred twice. One patient recovered considerable power in the affected hand, while the other experienced no relief worthy of mention.

Art. 39.—*On Spinal Irritation.*

By William A. Hammond, M.D.

(*New York Medical Journal*, March.)

At a meeting of the Medical Society of the County of New York, held Jan. 17, Dr. Hammond read a very valuable paper upon *Spinal Irritation.* The following are some of its chief points:—

After alluding to the distrust experienced by several distinguished writers, and shared by a large part of the profession, as to the existence of an independent affection which may properly be called "spinal irritation," the speaker stated emphatically his own conviction that there is such a disorder of the spinal cord, by no means rare or unimportant, and no more to be confounded with hysteria or the various other affections which it may simulate, and to which its symptoms have so often been referred, than with organic disease of the cord. He carefully reviewed the literature of the subject, giving a *résumé* of the more important facts and opinions advanced concerning it, from the introduction of the term by Dr. C. Brown, of Glasgow, in 1828, down to the present time. He then gave his own views, based upon a study of one hundred and twelve cases occurring in his private practice, eighty-three of which had been fully recorded, and twenty-nine less completely.

Symptoms.—(*a*) Centric symptoms: 1. Tenderness at one or more points over the spinal column, increased by pressure. This symptom Dr. H. regards as invariably present, although sometimes developed only by careful examination, and occasionally appearing only several moments after the pressure is applied. Any case which does not exhibit it he excludes from the category of spinal irritation. Dr. Austin Flint and some others think it may be absent in exceptional cases. The tenderness varies in character from a dull ache, seated in the deeper tissues and developed by strong pressure, to a lancinating pain, seated in the skin and subcutaneous areolar tissue, and excited by slight pressure. It varies in degree from a slight discomfort to a hyperæsthesia rendering the touch of the clothing insufferable. It may be limited in extent to the spot under pressure, or the pain may be propagated along the spinal nerves. The seat of the tenderness is most frequently the dorsal region, but may be the cervical or the lumbar, and it may extend over the whole spine. Each location has its characteristic eccentric symptoms. 2. Pain in the cord. The tenderness above described was external to the vertebral canal. The pain now spoken of is in the cord itself, and therefore cannot be excited (unless in a reflex way, through the former) by pressure on the spinous processes; but it may be excited by percussion and by motion of the spinal column. The pain is commonly felt near the point of external tenderness, but may be distant from it. It was present in one hundred and nine of Dr. Hammond's cases.

(*b*) Eccentric symptoms. These constitute the most noticeable ones, and vary in accordance with the part of the cord irritated. Among those occurring in Dr. Hammond's cases are the following, under their respective regions: 1. *Cervical irritation:* Vertigo, headache, tinnitus aurium, visual disturbance, sense of frontal constriction; tenderness of sealp; mental aberration (more or less marked in every case); insomnia, or excessive somnolence; neuralgie pains and motor disturbance in parts deriving their nervous supply from the affected region—in scalp and face, if this were the upper cervical; in upper part of chest and upper extremities, if it were the lower cervical; nausea and vomiting, but *not* gastric pain. 2. *Dorsal irritation:* Gastralgia (in every case), gastric flatulence, acidity, nausea and vomiting, pyrosis; palpitation, cardiac oppression, syncope; dyspnœa, cough; intercostal neuralgia, inframammary pain (very frequent); motor disorder (spasm or paralysis).

3. *Lumbar irritation:* Neuralgia of lower extremities, and sometimes of back and abdomen; uterine, ovarian, and rectal pain; strangury; tonic spasm of muscles in lower extremities, clonic spasms (occasional in every case), paralysis. The above symptoms are taken from cases where the tenderness was located in but a single region of the spine. In those where it was located in both the cervical and the dorsal region, or both the dorsal and the lumbar, the symptoms presented a combination of those characteristic of each region; and in ten cases, where the whole spine was tender, they were quite irregular in their manifestations from time to time.

Causes.—Sex is the strongest predisposing cause, ninety-three of the one hundred and twelve cases being females. Age has its effect, fifty of eighty-three cases being between fifteen and twenty-five years. Hereditary influence was ascertained in some instances. The exciting causes are often impossible to fix. Among those determined in the cases reported, are mechanical violence, sexual excesses, mental fatigue and anxiety, innutrition, abuse of alcohol and of opium, exhausting diseases.

Pathology.—The essential pathological condition in this affection Dr. Hammond considers to be anæmia of the cord, and he gives *in extenso* his reasons for this opinion. Other writers have attributed the spinal irritation to congestion, inflammation, and many other conditions. That anæmia may cause the irritability is shown by analogy, and that local anæmias may be produced is explicable with our present knowledge of the vaso-motor function of the sympathetic. The irritation thus established would seem also to have a secondary influence upon the sympathetic, resulting in the visceral disturbances that constitute so important a feature of the disease. The well-known laws of reflex action suffice to explain the effects of pressure, percussion, &c., and the aberrations of sensation and motility.

The *diagnosis*, after rejecting all cases which fail to present the vertebral tenderness, lies between this affection and the other spinal diseases which, in their earlier stages, may resemble it—chronic myelitis, meningitis, and congestion. An early and correct diagnosis is of the greatest moment as a guide to treatment, the indications for which, in spinal irritation, are quite the reverse of those in the other affections. In a matter of such vital consequence we shall not attempt the imperfect abstract our limits would compel, but refer the reader to the paper itself.

The *prognosis* is favourable, all cases being alleviated by persistent treatment, and nearly all being ultimately cured.

Treatment.—The indications are four: "1. To remove the cause; 2. To improve the general tone of the system; 3. To increase the amount of blood in the spinal cord, and improve the nutrition of this organ; 4. To set up a counter-irritant action in the vicinity of the disordered region of the cord." The first indication speaks for itself. The second is met by tonics (as iron, quinine, zinc, cod-liver oil), and especially by alcoholic stimulants. The third by strychnia, phosphorus, phosphoric acid, opium, heat to the spine, the recumbent posture, and, above all, the direct galvanic current scientifically applied. (The induced current also is of service applied to the affected muscles, where paralysis is pre-

sent.) Of counter-irritants, blisters and dry cups are to be preferred to antimonial ointment. Wet cups or leeches are inadmissible.

The paper concluded by reports of illustrative cases.

Art. 40.—*Tetany or Remittent Tetanus.*

By Walter Moxon, M.D.

(*Guy's Hospital Reports*, vol. xv.; and *British Medical Journal*, March 19.)

Dr. Moxon gives us a suggestive paper, with notes of a well-marked case of this complaint, which is familiar to the readers of Trousseau. All of us who have seen much of the diseases of children and young patients—especially females—must have witnessed many cases of carpo-pedal spasms, with tetanic or spastic rigidity of the jaws and muscles of the spine and trunk. Dr. Moxon points out their similarity to the symptoms of ergotism. We cannot but think, however, that it is the vice of a purely clinical nomenclature of diseases, of which Dr. Moxon (as we understand his other paper) is so much enamoured, that it associates similar symptoms arising from utterly dissimilar causes: for, in one case of tetany, a child may have general tuberculosis; in another, a married woman may be suffering from puerperal lesions; and in a third, the real cause may be what Dr. Marshall Hall called "temper disease." We have seen one such case where similar symptoms were always induced by a girl being set to scrub a floor or wash plates and dishes; whilst in a young lady they were associated with the phenomena of retarded puberty. In thus writing, we do not wish for a moment to undervalue Dr. Moxon's interesting report; and it is very satisfactory to learn that in his little patient the bromide of potassium in five-grain doses proved completely successful in removing the spasms.

(B) CONCERNING THE RESPIRATORY SYSTEM.

Art. 41.—*Observations on the Treatment of Certain Complications of Hooping-cough by Means of the Oil of Turpentine.*

By Bedford Brown, M.D., of Alexandria, Va.

(*American Journal of the Medical Sciences*, January.)

Probably no other drug exerts so prompt and universal an influence over the entire secernent system of membranes, as sudorific, diuretic, expectorant, and alterative, as the oil of turpentine. These peculiar powers of the remedy render its action particularly applicable to the treatment of the grave forms of hooping-cough, the more dangerous complications of which affection are, with the exceptions of pneumonia and inflammation of the cerebral substance, generally confined to the mucous surfaces or serous membranes of the brain.

It will be found that torpidity of the renal functions is a marked and important feature of all the more serious forms of this affection.

The action of the turpentine, under these circumstances, is that of a decided but safe diuretic, often producing a copious flow of limpid urine to the manifest relief of the general symptoms, whether febrile or irritative.

On the morbid states of the bronchial mucous membrane in hooping-cough, the remedial influence of the turpentine is that of a soothing, but active expectorant, reducing inflammatory action, tranquillizing irritation, and diminishing copious and exhausting discharges.

Over the varied irritations and inflammations of the vast mucous tract of the alimentary canal, which accompany hooping-cough so tenaciously during the hot and malarious seasons, the action of the oil of turpentine is the most permanent in its corrective influence of any other agent in the knowledge of the writer.

The morbid complications of this affection to which the turpentine treatment is more particularly adapted are infantile remittent or gastric fever, a peculiar irritative form of continued fever, bronchitis, hæmoptysis, convulsions, dysentery, and enteritis.

Infantile Remittent Fever.—During the prevalence of hooping-cough, particularly in the hot season, in many cases, an irritation or inflammation of the alimentary mucous membrane is exceedingly liable to arise, attended with sero-bilious or mucous discharges, which at certain stages of such cases passes into a train of constitutional derangements characterized by excessive tympanitis, fever of a low remittent type, exhausting perspirations during the remission, general prostration, muttering delirium, singultus, loaded tongue and scanty urine. In relieving this train of symptoms the oil of turpentine has proved decidedly efficient.

Bronchial Affections.—In the advanced stages of certain cases of hooping-cough, a subacute form of bronchial inflammation occurs of an exceedingly obstinate character, attended with very copious bronchorrhœal discharge, remittent fever, emaciation, and nocturnal perspirations, frequently so free as to resemble those of hectic fever. The mucous discharge in these cases is so excessive as to endanger the lives of the very young and feeble by sudden asphyxia, while in others the exhaustive process is gradual but progressive. In this class of cases bronchial dilatation, emphysema, and permanent thickening of the mucous membrane are found. For relieving this most obstinate form of bronchial affection, the steady and persevering use of the oil of turpentine has never failed in Dr. Brown's own hands.

Continued form of Irritative Fever.—In malignant epidemics of hooping-cough, this form of fever is not unfrequently met with. Its leading characteristics are, continued fever, temperature ranging from 102° to 107°, with but little diurnal variations, progressive and great emaciation, an unvarying dry and husky skin, suspension of the bronchial secretions, frequent pulse, constant and busy delirium, constipation, retraction of abdominal walls, inordinate erethism of the nervous system, vigilance, dry and glazed tongue, and scanty urine. This is not the enteric fever of Louis, for it is wanting in its specific local lesion. Neither is it dependent on local inflammatory action, but apparently is due to the poisonous influence of the peculiar infection of pertussis aided by epidemic influences. In restoring the secretions,

and relieving the febrile and nervous excitement, the oil of turpentine here, as in the preceding instances, has been efficient.

Hæmoptysis.—Hæmoptysis, if not associated with tubercle, can usually be controlled by the turpentine treatment.

Cerebral Complications.—In congestive and inflammatory affections of the brain the condition of the renal functions will usually be found torpid, occasionally nearly suppressed here as in other instances. To relieve this difficulty the turpentine is the most active agent. When given in these affections in combination with the bromide and iodide of potassium in quantities sufficient to produce decided stimulus to the urinary functions, it constitutes the most successful treatment with which the writer is acquainted. Finally, the turpentine may, under certain circumstances, be combined with cathartics, other diuretics, mineral or vegetable, expectorants, or sedatives, with advantage, according to the particular requirements of the case.

Art. 42.—*On Pleuritis.*

By James R. Leaming, M.D.

(*The Medical Record*, December 1.)

At a meeting of the New York Academy of Medicine, October 7, 1869, Dr. James R. Leaming read a paper upon pleuritis.

He spoke of the great frequency of the disease, and of the constantly recurring evidences, both in the autopsy room and under the stethoscope, of its subacute form having existed unrecognised, though not the less potent for ill in crippling the lung by adhesions, thereby permanently lowering the patient's vitality, and acting as a determining cause and powerful ally of tubercular phthisis.

After detailing the symptoms of acute pleuritis, the speaker said that "from the beginning it is accompanied with congestion of the lungs, and, unless aborted by heroic treatment, becomes pleuro-pneumonia. Indeed, it is owing to the pulmonic complication that the symptoms are so violent." Even before the appearance of these rational symptoms, careful auscultation would discover signs of its approach, in the muffling, by congestion, of the respiratory murmur, and in the slight jar produced by the dryness of the pleural surfaces. "The disease once established, and lymph thrown out upon the pleural surface, and exudative matter into the true respiratory system of the lungs, with effusion of serum into the cavity of the pleura—the activity of the rational signs subsides, . . . but some of the physical signs remain. In three or four weeks the exudative matter will have been resorbed or expectorated, the serum in the pleural cavity will have disappeared, and the lymph alone will remain to cause thickening of the pleura or adhesions, to be slowly removed by time."

The speaker dwelt upon the symptoms and pathology, to give force to his views of treatment. Immediately upon the sudden invasion of the acute disease, was "the time for vigorous treatment, to arrest this inflammation before lymph is thrown out to damage the lung by adhesions —general bleeding, cupping, or leeching, to be followed by a large dose

of calomel." This dose must be large—twenty, thirty, forty grains, according to circumstances—not for its purgative, nor yet for its constitutional effect; the former was undesirable, the latter disastrous; but "to produce a profound impression upon the great organic nervous system," which would seem to have lost its wits, and which nothing would bring to its right mind like the sedative dose of calomel. One vigorous blow, and the work was done. Or, if the stitch and the congestion were not thus at once relieved, a large fly-blister and a few days' rest would restore the patient to perfect health, and leave the lung undamaged by adhesions. But if nature had been left to struggle alone for a few days, till the disease had gained the mastery, and effusion and exudation taken place, then active treatment would be only harmful. We must then avoid all depressing agents, especially blisters (which would be likely to cause further exudation), and simply sustain nature by special care for the digestive function.

Next was given the clinical history of subacute pleuritis, with its insidious approach and silent effusion, the patient hardly aware of any illness, or referring his increasing *malaise* to anything but its proper source. Such cases, as above mentioned, might go through their whole course, and the disease be unsuspected. Physical examination alone could detect it with certainty; and early detection was the more important, in order to avert the terrible sequela, tubercular consumption, which the speaker thought would be generally admitted as frequent. His own experience had led him to attribute a majority of the cases of consumption to pleuritic adhesions as a determining cause.

How prevent these adhesions? or how, when formed, prevent their worst effects? Nature does the first by keeping the pleural surfaces apart, by means of the effused fluid, till the lymph has become so changed that strong adhesions are less likely to form. We should follow her, and not attempt removal of the fluid till this danger is over. Too often the opposite course is taken, and with the saddest results, not only from thwarting nature's conservative action, but also from the effect on the kidneys and the digestive organs of the blisters, diuretics, and drastic cathartics employed. If, after a proper time, the serum be not absorbed, we should resort, not to medicine, but to the trocar.

The adhesions once formed, the patient must be sustained and placed under the best hygienic conditions. Rubbing the chest with turpentine or the compound iodine ointment, and the long-continued use of muriate of ammonia, were very well; but of far greater moment was "the habit of steadily filling the lungs with air, whilst raising the arms above the head; then, holding the breath, to bring them downwards and outwards till they press upon the sides, before allowing the breath to escape. This fills the lung to its utmost capacity, which it is difficult to do in any other way." It tends to elongate the adhesions, and, in so far, to relieve the crippled lung; besides largely increasing the vital capacity, and so diminishing tubercular tendencies.

In adhesions allowing some motion of the lung, auscultation would discover a peculiar soft, subcrepitant sound, like that of tearing flannel, produced by the stretching of the fibrinous bands—all the crackles being in one plane, and moving in one direction. If the lung had little or no motion, though this sign might be absent, yet "the broncho-

respiratory murmur would come to the ear in inspiration, altered, harsh, and jarring; the same sign would occur in thickening; and the percussion-note would be sonorous, flat, and wooden."

Intercurrent pleuritis, when occurring in connexion with cardiac or renal disease, showed no great tendency to plastic deposit. That attendant upon tubercular phthisis, on the contrary, was apt to form strong adhesions. It was always circumscribed, often quite narrowly; and the exudation of lymph must be regarded as conservative, acting as a derivative from the inflammatory process in the lung, enforcing rest of the part, and preventing perforation of the pleura and its serious consequences. It should not, of course, be interfered with.

Circumscribed pleuritis might be diagnosticated by the dull space where the respiratory sounds are absent, surrounded by a ring of subcrepitant râles, denoting stretching of the adhesions. Where a complication of pneumonia, it might without care be mistaken for tubercle. Occasionally, however, the ring of adhesions might form a small sac between the opposed pleural surfaces; and this, becoming filled with fluid, instead of deadening the respiratory sounds, might transmit them with increased resonance; and, if in the neighbourhood of a distended colon, it might give a tympanitic note on percussion. The speaker related cases in illustration of this fact, which he attributed to the facility with which "compressed" fluid receives and conveys sonorous vibrations.

Dr. Chamberlain asked Dr. Leaming what indications he would consider warranted paracentesis, while the effusion was still supposed to be non-purulent.

Dr. Leaming thought a considerable time should elapse before resorting to the operation—from six weeks to two, or even three, months, if the patient's strength would allow. But we must watch this, for the continuance of the fluid in the chest tended to depress vitality.

Dr. Chamberlain had been surprised at the reported successes of Professor Dupré, who practised very early paracentesis in all cases of pleuritic effusion, whether the amount of fluid were large or small. He had himself supposed a certain persistence of the effusion, in spite of other measures, necessary to justify puncture. One of the means he had found most useful in producing resorption was the continuous application of hot fomentations,—flannels wrung out of hot water and covered with oiled silk. He had considered them particularly suited to those cases of pleural effusion dependent not upon structural alteration in the pleural membrane, but upon a simple disturbance of the balance between exhalation and absorption, as in cardiac hydrothorax.

Dr. Leaming said that Dr. Bowditch, of Boston, who introduced the treatment by early puncture, had abandoned it, as he found that either the fluid returned or he got adhesions.

Dr. Peaslee had been much interested in the cases of Professor Dupré, who claimed to have jugulated pleurisy by early paracentesis. He thought this practice based on correct principles, and not so contradictory to Dr. Leaming's views as might at first appear. Why should not acute pleurisy be thus aborted, just as is acute orchitis by

tapping the tunica vaginalis? In every case of true inflammation of a serous membrane (not of passive effusion, as in hydrothorax), the fluid poured out was an exudation of liquor sanguinis, not a simple effusion of serum. In the non-inflammatory serous effusions there was no possibility of the formation of false membranes, for there was nothing to form them of. But in the true inflammatory exudation we had the material for adhesions; and if it could be removed at once, before its fibrin had time to coagulate, then no false membrane could be formed; for the inflammation exhausted itself in the exudation, and unless this were lighted up anew, the pleura could pour forth no more fibrinous material. But if you tapped later, you got nothing but serum; you left all the fibrin behind, and left the apposed surfaces in the most favourable position for it to glue them together. If you delayed your tapping till the exudation had existed a week, it was too late to prevent adhesions, and must be still further delayed, as Dr. Leaming had said, as long as the patient would bear it; but if you could tap within twenty-four hours, the evil might be entirely prevented.

Art. 43.—*Tapping of the Chest in Acute Pleurisy.*

Under the care of Dr. Murchison.

(*The Lancet*, January 1.)

The patient in this case was a boy, aged seven years, whose chest was tapped on the twelfth day of an attack of acute pleurisy of the left side. There was a large effusion of serous fluid, which had forced the heart over to the right side, where its apex could be made out between the fourth and fifth ribs. The indications for the operation were a frequent, feeble, and irregular pulse, and great dyspnœa. Dr. Murchison stated that in cases of extensive pleuritic effusion, tapping is performed for several reasons. By an early removal of the serous fluid, the formation of pus in the chest and empyema may be prevented; the lung also has a better chance of recovering itself and of expanding if the surrounding fluid be removed before the solid exudation has formed firm adhesions. The main object of the operation, however, is the restoration of the position of the heart, as there is far greater danger in cases of pleuritic effusion, especially when the left side of the chest is affected, of the patient dying from sudden syncope than from asphyxia. The boy did very well after the operation; the left lung speedily expanded, and healthy sounds could be heard over nearly the whole of the chest. There was no tendency to a reaccumulation of fluid; and on December 19th, the dulness, on percussion, was limited to an extent of two inches over the base of the left lung. The progress of this case to complete recovery has, however, been retarded by the manifestation of two unfavourable symptoms—a high evening temperature, reaching to 102·6° F., and occasionally to 103° F., and frequent profuse sweating. These symptoms, according to Dr. Murchison, may be attributed to one of two causes: either the fluid left in the chest has become purulent, or there may be a deposition of tubercle in the lung. The latter view, however, seems to be negatived by the healthy character of the lung-sounds over the left as well as the right side of the chest.

Art. 44.—*A Case of Empyema treated by Paracentesis, and subsequently by Blistering; Cure.*

Under the care of Dr. Andrew Clark.

(*The Lancet*, January 1.)

The success which attended the treatment renders the following case well worthy of record. We are indebted to Mr. Grubb, the resident medical officer of the London Hospital, for notes.

The patient was a weakly boy eight years of age, who, six months before admission, had had an attack of scarlatina, which was followed by dropsy lasting for six weeks. One week before admission the boy again suffered from dropsy. When first seen by Dr. Clark he presented the following symptoms: Anasarca; great dyspnœa; a short, dry cough, without expectoration; a flushed face; and an inability to lie on the left side. The heart was displaced to the left; no cardiac bruits. The lung-sounds on the right side were very feeble, and all the signs were present of considerable effusion into the corresponding pleura. The urine was very scanty, smoky, and contained much albumen; specific gravity 1015. The pulse was 106, and the respirations 36 in the minute; temperature about 102°. There was a slight amount of ascites.

The patient was first treated by tincture of the perchloride of iron, spirit of nitric ether, digitalis, and bitartrate of potash; and for a time was put on a daily allowance of three ounces of gin. The breathing at first was relieved by this treatment, and an increased quantity of urine was passed; but at the end of the first week after the patient's admission into the hospital there was great dyspnœa and restlessness. On the tenth day the right side of the chest was tapped, and forty ounces of purulent fluid withdrawn from the pleura. After this operation the breathing was much quieter, and the general condition of the patient improved. About the middle of June, two weeks after the paracentesis, the old symptoms returned, with all the physical signs of fresh accumulation of fluid on the right side of the chest. On July 1st a blister three inches square was applied over the seat of dulness. Under the repetition of this local treatment, and the administration of digitalis, bicarbonate of potash, iodine, and steel, and subsequently of cod-liver oil, the patient gradually improved; the effusion disappeared, and the respiratory sounds returned on the right side of the chest. On December 2nd the boy was discharged as cured.

Art. 45.—*On Hæmoptysis.*

By George Johnson, M.D., F.R.C.P.

(*The Lancet.*)

Dr. Johnson enumerates the causes of hæmoptysis as follows:—(1) Tubercles in the lungs; (2) Disease of the left side of the heart, with incompetent mitral valve, or disease of the right side of heart.

(3) Bronchial hæmoptysis is found in asthma, and active congestion of the pulmonary and bronchial vessels causes it. In pneumonia and bronchitis it sometimes comes on. (4) Primary cancer of the lung. (5) Emphysema. (6) Aneurism of the aorta; (7) Deterioration of the blood, as in purpura, and in uræmia and poor living. (8) Hæmoptysis may be vicarious of menstrual discharge, or be idiopathic. Dr. Johnson thinks that hæmoptysis may sometimes cause phthisis, as Niemeyer will have it. The treatment he recommends is rest and sucking of ice, or local application of ice, gallic acid in ten grain doses every three hours, or the liquid extract of ergot in half drachm doses. Oil of turpentine in 20 drop doses, or the inhalation of turpentine vapour is recommended. Lastly, an emetic of sulphate of zinc or ipecacuanha and antimony is advised.

Art. 46.—*Case of Collier's Lung.*

Autopsy and Remarks by Mr. T. P. Pick, of St. George's Hospital.

(*The Lancet*, January 29.)

Considerable doubt has sometimes been raised as to the origin of the black deposit in the lungs of coal-miners and others engaged in working among coal. In the following case, however, both from the microscopic appearances and from the large amount of amorphous silica obtained by incineration of the lung, there can be little doubt that the condition of the lung was due to the inhalation of finely pulverized coal-dust into the bronchial tubes, and thence into the air-cells. We are indebted to Mr. T. P. Pick for the case.

John B——, aged sixty-four, had originally been a clay-pipe maker by trade, but for some time had abandoned this occupation, and had been engaged as a coal porter. During the last three years he had been employed in filling balloons with gas at Cremorne. When admitted into St. George's Hospital (under the care of Dr. J. W. Ogle), he stated that during the last six months he had become very rapidly emaciated, and had suffered from constant sickness. For two months he had had considerable swelling and œdema of the legs. On examination, there was found to be a hard solid tumour, the size of a cricket-ball, in the epigastric region. From the presence of this, the constant sickness, and the rapid and extreme emaciation, there was no difficulty in arriving at the diagnosis that he was suffering from malignant disease of the stomach; and this subsequently, at the post-mortem examination, proved to be the case. The only symptom referable to the lungs was extreme dyspnœa; and, unfortunately, owing to the very exhausted state in which the man was, no careful stethoscopic examination of his chest was made. He gradually sank, and died three weeks after admission.

At the post-mortem examination, made by Mr. Pick, a quantity of clear, watery fluid was found in both pleural cavities. The pleura covering the surface of the lung was thickened, and from its inner surface were given off a number of fibrous bands, which traversed the lung-tissue in every direction. The lungs felt firm and solid, but not

uniformly so; and upon rolling a portion between the finger and thumb a number of small rounded bodies could be felt, resembling somewhat the sensation experienced by the presence of miliary tubercle. Upon section, a quantity of black fluid could be readily squeezed out, which under the microscope presented a multitude of granules of black pigment. There was a slight amount of emphysema of the anterior margins and apices of both lungs. The structure of the lung was of a very peculiar mottled appearance, the tissue being of a dark blue, or bluish-black colour, studded throughout by little black masses, varying from the size of a millet-seed downwards. These felt like little hard rounded masses under the finger. Upon making a microscopic examination of a portion of the lung at a part where there were none of these little deposits, the air-cells were perfectly normal in appearance, with the exception that on their walls was accumulated a quantity of amorphous black pigment in varying proportions. This deposit appeared to have taken place within the interior of the cells, for here and there one was found completely filled and choked up by the material. Upon examination of one of the little rounded masses, it was found to consist of a deposit of minute black granules, irregular in size and shape, and appeared to be formed by a coalescence of a cluster of air-vesicles by destruction of their surrounding membranes, and a blocking up of the little sac or cavity thus formed with those pigmentary granules.

A portion of lung the size of a walnut was incinerated, and the reddish-coloured ash was fused with carbonate of soda, and treated with hydrochloric acid in the usual way. The residue, weighing about two-fifths of a grain, consisted of an almost white, amorphous powder, which was evidently silica, plainly indicating the presence of coal-dust in the lungs. The ash produced by incineration of the lung also contained traces of manganese and iron. The bronchial glands were for the most part completely degenerated by the same black granular deposit.

With regard to the other organs, it need only be stated that the diagnosis formed during life was correct, inasmuch as the pyloric orifice of the stomach was found to be extensively infiltrated by the scirrhus variety of cancer. There were also secondary deposits of cancer in the liver and pancreas.

Remarks.—This case is the more interesting, inasmuch as the man did not die from the effects of the disease in the lungs, but from other causes entirely remote. Nor, in fact, did he appear to have suffered from the usual symptoms which attend this form of disease. The case, however, bears out the remarks of Dr. Greenhow,* that "the amount of disturbance of the general health in constitutionally sound subjects is much less than in those who are the subjects of pulmonary disease arising from constitutional cachexia." The only symptom noted was extreme dyspnœa, and this is described by the same observer as "a very marked feature of such cases, and is sometimes so extreme as to prevent active locomotion, even while the patient is able to continue his occupation." But though the patient died of another cause, and did not present any symptoms that the disease had made any great progress, still a very marked change was found in the lungs after death. For

* *Path. Soc. Trans.*, vol. xvi. p. 61.

though we were able to obtain for microscopic examination certain parts where the disease was in an early stage, and therefore more available for this purpose, still there were large portions where the deposit had made great inroads and had destroyed large tracts of breathing surface. In fact, if we had found in any specimen of lung the same amount of tubercular matter as we did of this black coal-dust deposit, we should have been quite satisfied that there was sufficient lesion to account for death. The microscopic examination of the least affected parts was most satisfactory, as we were quite able to assure ourselves that this deposit had taken place *upon* the walls of the air-vesicles themselves, and was therefore due, in all probability, to the inhalation of the material, whatever it was; while the chemical analysis, imperfect as it was, was nevertheless sufficient to prove that this material was coal-dust, from the very large amount of silica. The occupation of the man sufficiently accounted for the presence of this coal-dust in the system.

Art. 47.—*The Indications for Tracheotomy in Cases of Laryngitis and Diphtheria.*

By George Johnson, M.D., F.R.C.P., Physician to King's College Hospital; Professor of Medicine in King's College, London.

(*British Medical Journal*, January 15.)

When the symptoms of laryngitis, whether in a child or in an adult continue and increase and threaten life, or when, in a case of diphtheria, the extension of the disease to the larynx causes the same threatening symptoms, we ought to have recourse to tracheotomy; and by this operation we may not unfrequently save a life which must otherwise inevitably be lost. The operation is more frequently successful in cases of simple laryngitis than in diphtheria—for the reason that, in the latter disease, the exudation often extends into the trachea and bronchi; so that an artificial opening in the windpipe does not counteract the cause of the apnœa. It is more frequently successful in adults than in children, and more frequently in older than in very young children. In adults, Dr. Johnson has rarely failed to save life by the timely performance of tracheotomy; but in children he has rarely succeeded. In very young children the trachea is so small that it is scarcely possible to introduce a metal tube: and the operation is therefore impracticable. The youngest child that Dr. Johnson has seen saved by tracheotomy was one about two years old, who, while suffering from inflammatory croup, was operated on by Sir W. Fergusson.

Excluding those cases in which the operation is impossible on account of the small size of the trachea, the principles which should guide us in our determination to resort to tracheotomy are the same, whether the patient be a child or an adult.

In general terms then it may be stated that, when, in spite of prompt and judicious treatment, the obstruction in the larynx and the consequent dyspnœa continue and increase, and when there is commencing lividity of the lips and face, the time for tracheotomy has arrived.

When a laryngoscopic examination is practicable, and when, by this means, we discover such an amount of structural change within the larynx as must obviously require several days, and perhaps even weeks, for its removal, the necessity for the operation will be still more apparent.

In considering the question of tracheotomy, it must continually be borne in mind that, if the operation be too long deferred, although it may remove the distressing sense of constriction in the throat, it will not save the patient's life. The reason is, that a prolonged partial apnœa gradually induces a condition of lung and of pulmonary artery which is irremediable and fatal.

The order of events appears to be this. The obstruction in the larynx limits the supply of air to the lungs; the blood in the pulmonary capillaries is imperfectly aërated; and some partially aërated blood passes on into the systemic arteries. At the same time the minute pulmonary arteries, by their contraction, lessen the supply of blood to the pulmonary capillaries in proportion to the limited aceess of air. This contraction of the minute arteries is doubtless called into action by a nervous influence transmitted from the capillaries. A message is telegraphed to the arterial stopcocks, requiring a diminished supply of blood so long as the respiratory changes are partially suspended. The blood therefore accumulates in the trunks of the pulmonary artery, in the right side of the heart, and in the systemic veins. The distension of the superficial veins renders the lips and the skin more or less livid; while the retrograde engorgement of the bronchial veins and capillaries, which belong to the systemic venous system, results in a serous effusion into the bronchial tubes. This serous exudation gravitates towards the bases of the lungs, filling the air-cells and smaller tubes, and thus still farther impeding respiration. Meanwhile the slowly moving, partially stagnating blood in the pulmonary artery becomes more and more viscid, and at length partially coagulates. Hence, on post-mortem inspection, fibrinous coagula, which had evidently been in process of formation for several hours before death, are often found in the pulmonary artery. A state of partial apnœa therefore, exceeding a certain limit in degree and in duration, results in œdema of the lung, and coagulation of blood in partially obstructed pulmonary artery; and these changes in the lung and in the artery may alone suffice to destroy life. Tracheotomy then, to be successful in rescuing the patient from fatal apnœa, must be resorted to before the lungs have become highly œdematous, and before the blood in the pulmonary artery has lost its fluidity.

When the laryngeal obstruction has been of recent origin and rapid in its course, it is the more likely that life may be saved by the prompt performance of tracheotomy; but when urgent dyspnœa has been of long duration, there will always be reason to fear that the lung and the blood in the pulmonary artery may have passed into the condition that Dr. Johnson has described.

We may sometimes obtain more positive evidence as to the œdematous condition of the lungs. There may be dulness on percussion over the lower lobes of the lungs, and a fine moist crepitation over the same extent. As a rule, however, when there is great obstruction in the larynx, auscultation teaches us little as to the condition of the lungs.

The loud laryngeal stridor completely masks the pulmonary sounds, which besides are very feeble in consequencc of the small volume and force of the tidal air in the lungs.

We may suspect that the blood in the pulmonary artery is coagulating when, with increasing dyspnœa, there is a combination of pallor and lividity of the skin and lips, with extreme feebleness of the pulse. The lividity is a result of over-distension of the systemic veins, while the pallor and the pulselessness are due to a corresponding emptiness of the arteries; the venous fulness on the one hand, and the arterial emptiness on the other, being direct results of the obstruction in the pulmonary artery.

Dr. Johnson has nothing to say as to the mode of performing the operation of tracheotomy. That is a purely surgical question with which he does not meddle. But he must insist upon the importance of keeping the air of the room warm and moist so long as the patient has to breathe through the opening in the trachea. A neglect of this precaution might result in an attack of bronchitis or pneumonia.

Another point which deserves notice is, that while a patient is breathing through the artificial opening, so much is the reflex excitability of the larynx lessened, that during deglutition liquids sometimes enter the larynx, and then escape through the canula. This may to some extent be prevented by directing the patient to close the tube with his finger during the act of deglutition.

A gentleman suffering from acute laryngitis, whom Dr. Johnson attended with Mr. Heckstall Smith and Dr. Allfrey, and who was rescued from impending suffocation by tracheotomy performed by the latter gentleman, while he was breathing through the tube, one day got a piece of bone into his larynx from soup that he was drinking. The foreign body caused him much annoyance until it was expelled by a cough. The patient completely recovered, and returned to his work in India. The lesson taught by this and other cases is that, while a patient is breathing through an artificial opening in his windpipe, unless deglutition be performed with care the food may "go the wrong way," and either lodge in the larynx, or passing through the larynx, it may enter the bronchial tubes.

Art. 48.—*The Local Treatment of Croup.*

By Adolph Weber, M.D.

(*Medical Times and Gazette,* January 22.)

A knowledge of the power possessed by lactic acid to dissolve fibrinous exudations, induced the author to try it in cases of croup. At first he used it only after the operation of tracheotomy, partly with a view to keep the tracheotomy tubes clean, and partly hoping that the lactic acid might affect the membranes which extended downwards into the bronchi. The results were so favourable in both respects that he proceeded to try it in severe cases of croup before having recourse to tracheotomy. Since then he has not once had occasion to operate, and has not lost a single case of croup. In some very severe cases in which

inspiration and expiration were equally obstructed, and the condition of the fauces indicated an abundant fibrinous exudation in the trachea, the difficulty of breathing was completely relieved within seven to ten hours of using this remedy, and two or three days after no trace of the local affection remained.

During the treatment there was not, as is generally the case, an expectoration of tough membranous sputa, but gradually the whistling barking inspiration and expiration were replaced by distinct rattling noises; the voice, before quite suppressed, began to assume a hoarse timbre, and considerable quantities of loose white frothy phlegm were expectorated during the fits of coughing, until at last the struggle for breath quite ceased, and the disease assumed more the character of a catarrhal affection of the throat.

The treatment consists in the local application of the remedy to the windpipe by means of inhalation. The patient is made to inhale a solution of lactic acid (15 to 20 drops in half an ounce of water) at first every half-hour, and afterwards, when the respiration improves, every hour or every two hours a solution of 10 to 15 drops in half an ounce of water.

The inhalation is discontinued as soon as the dyspnœa has subsided, and to promote expectoration camomile-tea is exhibited.

In using the inhalation care must be taken that the vapour does not affect the eyes or face.

With this treatment was conjoined the internal exhibition of carbonate of soda every half-hour or every hour, which was thought to exert a beneficial effect upon the exudation.

(c) CONCERNING THE CIRCULATORY SYSTEM.

ART. 49.—*On the Signs of Pericarditis.*

By M. NOEL GUENEAU DE MUSSY.

(*Gazette Hebdomadaire*, No. 51, 1869.)

The memoir including the following remarks on the diagnosis of pericarditis has been dedicated by M. Gueneau de Mussy to Dr. Stokes of Dublin:—

"The labours of Collier, Bouillaud, Hope, and Stokes have rendered appreciable to our means of investigation in a great number of instances, an affection the diagnosis of which had been regarded by Laennec as constituting an almost insoluble problem. Still, according to the remarks of Dr. Stokes, when one thinks on the very considerable number of pericardial lesions which appear to have their origin in an inflammatory process, as, for instance, the milk patches, the partial or general adhesions, the thickenings of the sub-serous connective tissues, it must occur to him that pericarditis is one of the most common of existing maladies, and one which very often passes unrecognised: sometimes because it is but an episode in a very serious morbid condition, and its proper symptoms are concealed in the midst of more prominent and more urgent functional disturbances; at other times because the phenomena accompanying it

have not that clearly defined significance which might favour their being readily traced back to their origin. Thus Stokes has advised the examination of the pericardium in all cases of a febrile character, the nature of which remains doubtful, and which seems to be due to no organic localization and to no apparent pathogenic condition. This advice has been of great service to me more than once, and on many occasions an attentive examination has enabled me to make out pericarditis as the substratum of a febrile condition which might have been classed as a gastric or continued fever, or as the remote cause of some inexplicable exacerbation in the course of an acute disease. In fact, although, as M. Bouillaud has shown, rheumatic fever is of all the acute affections that of which pericarditis is most frequently a complication, still this latter malady is found in the course of several other affections, among which are to be placed in the first line, pleuro-pneumonia, the eruptive fevers, especially scarlatina and variola, and puerperal fever.

"In the course of the present year I had an opportunity of observing a woman who after parturition presented a febrile condition the explanation of which was mainly sought for in the generative apparatus, and in whom pericarditis was found, an affection which was soon arrested by appropriate treatment. Last year, in the course of a case of malignant scarlatina, I observed the occurrence of arthritis complicated by pericarditis. I have also seen pericarditis succeed erysipelas. Quite recently in a female patient who, at first sight, presented no other objective symptom than a condition of continued fever, I made out an inflammation of the pericardium which, as it seemed to me, might have been regarded as rheumatic, although independent of any articular complication, because it had been developed under the influence of external conditions such as generally provoke the evolution of rheumatic affections.

"In this memoir I will indicate some new and but little known signs which in obscure cases may serve to clear up the diagnosis of pericarditis. Attention has been directed to the pain developed on pressure over the epigastrium or in the pericardial region. The first has appeared to me to be of more frequent occurrence than the second symptom, and, moreover, presents some interesting peculiarities. Whilst the characteristic pain of diaphragmatic pleurisy has its chief seat at the junction of two lines, one of which is carried along the external edge of the sternum and the other runs parallel to the inferior edge of the chest in the hypochondriac region, the chief seat of the pericardial pain is at the costo-xiphoid region; sometimes on both sides of the xiphoid appendage, at others on one side only, and more frequently on the right than on the left. At the same time, and in the side where this epigastric sensibility is manifested, may be made out in the interval of the inferior attachments of the sterno-mastoid muscle an analogous pain along the course of the phrenic nerve, as in diaphragmatic pleurisy.

"The physiological explanation of this phenomenon can easily be given: the two diaphragmatic nerves enclosed with a fibrous tissue from the pericardium may receive the impression of the irritation, which, invading the nerve trunks, is at once transmitted in an ascending and descending direction towards the origin of its branches and towards one of its terminal branches, which corresponds to the costo-xiphoid angle. According as the inflammation is more localized in the right side or in the

left of the pericardium, the impression is the more directly received by the one or the other phrenic nerve, this impression being propagated both in a centrifugal and in a centripetal direction. I mention the fact without attempting to determine the mode of propagation. It still remains undecided whether the neurolemma is involved in a process of congestion, or if, on the other hand, there be some abnormal modification of the nerve tissue.

"These anomalies of sensation are revealed only on pressure; they do not constantly manifest themselves from the commencement of pericarditis; in several cases, however, I have observed them even when the other signs of the affection were very obscure, and such as not to enable one to assert a diagnosis. In one case of puerperal pericarditis they were absent; but it must be remembered that in puerperal phlegmasiæ the element of pain may be wanting, and that the abdominal wall may be pounded without causing the least pain in cases where the peritoneal cavity is filled with pus.

"This morbid sensibility, the seats of which I have just indicated, seems to me to be much more constant than the precordial sensibility indicated by authors; and in cases where the latter exists, it is necessary to inquire whether it be not seated in the intercostal nerves, and thus constitute a phenomenon of reflex sensation analogous to those often pointed out by myself as present in other visceral affections.

"The increase of absolute or relative dulness indicates the presence of an effusion into the pericardium. M. Piorry has with reason insisted on the necessity of practising in succession superficial and deep percussion. Very frequently, indeed, the lung covers the anterior surface of the pericardium, and deep percussion alone will then enable one to make out any increase in size of the membranous sac. It is necessary to compare carefully, by means of percussion, the two halves of the sternum. In the normal condition they give the same sound. A dull sound over the left half indicates an increase of the volume of the heart or of its enveloping membrane. An appreciation of the tone also is of great importance whenever the volume of the heart or pericardium has been increased; a sharper sound with a tympanic timbre can then be made out in the infra-clavicular and pre-axillary regions on the left side. I have on some occasions even made out this tympanic sound behind at the part corresponding to the pericardium; and Graves states that in one case he was able to hear it below this latter region: he does not, however, speak of the infra-clavicular and pre-axillary regions, where it may be met with with much greater frequency. Without speaking of pleuritic effusions or of pulmonary infarctions, where it was noticed for the first time by Skoda, I have observed this sound in hypertrophy of the spleen and in meteorism of the stomach; it may be found more or less marked, I think, whenever the space intended for the lung becomes diminished either by some intra-thoracic lesion, or by the abnormal development of some infra-diaphragmatic organ.

"Auscultation combined with the preceding modes of examination generally bids fair to establish the diagnosis. But still the signs which are furnished by this mode are neither uniform nor constant. The diffusion and variability of bruits is ever one of their distinctive characteristics. This variability is expressed in their seat, and in their

timbre, they may be present and disappear according as the layers of the pericardium, covered by neoplasm, come into contact during the movements of the heart, or as a more abundant fluid effusion keeps them separated. The timbre and tone are changed according to the modifications which the surface of this neoplasm undergoes, and to the energy of the cardiac movements. It is thus that they may be rough or soft, weak or strong. The rubbing or blowing sounds are sometimes preceded by a less characteristic bruit which succeeds the systole, which may be called the *bruit de décollement*; it resembles the noise produced by separating widely the two palms of the hands, slightly moistened and previously applied the one to the other. A slight exudation on the surface of serous membrane, perhaps even its dryness, suffices for the production of this *bruit de décollement*, which may be commonly met with in the second stage whenever a blowing or rasping bruit exists in the first. When the cavity of the pericardium is occupied by effusion, the abnormal bruits may be wanting; then the normal cardiac bruits are feeble, as if remote, and the impulse of the heart's apex is absent or scarcely sensible.

"The most serious difficulty is the distinction of pericardial bruits from bruits which depend upon a lesion of the endocardium; and the difficulty is the greater since the same morbid action is frequently localized at the same time in both membranes. What I have said above on the diffusion and the variability of pericardial bruits is already an element in the diagnosis, their superficiality is another. When the two orders of morbid bruits exist, an attentive ear may often distinguish them, and one may in certain cases recognise that their points of origin are not seated at the same depth. Dr. Stokes has remarked that pressure exerted upon the pericardial region increases the pericardial bruits. I have met with cases where the contrary took place, and observation has enabled me to reconcile these apparently contradictory results. When the pericardium is dry, an energetic pressure diminishes the extent of the rubbing, and diminishes even the energy of the cardiac contractions, as one may easily find out by examining the pulse. If, on the contrary, an effusion separate the two layers of the pericardium covered by false membrane, pressure upon any point of the pericardial region forces them together and increases the rubbing. These changes in morbid bruits caused by pressure are seldom met with except in pericarditis, and may serve to distinguish the abnormal sounds which can be imputed to this lesion from those which depend upon endocarditis. However, if energetic pressure upon the pericardial region diminishes the energy of the cardiac contraction, one will understand that it may diminish the intensity of the bruits produced by lesions of the orifices. But it is probable that in order to obtain this modification a more energetic pressure, if it be possible, would be required than that which suffices to modify the bruit of the pericardium.

"Changes in position influence in a great number of cases the bruits of pericarditis, but do not affect those of endocarditis. Thus with slight effusion, if the patient be either seated or lying on one side, it will often happen that the rubbing sounds cease or become more obscure at the dependent parts of the pericardium, whilst at the parts which are relatively more elevated they become developed or are increased.

"It is almost useless to add that the reabsorption of the effusion which coincides with a return of the normal pericardial percussion sounds generally gives rise to rubbing sounds, the appearance of which may serve to confirm the diagnosis.

"When cured, pericarditis in the great number of cases leaves no sign of its course. But still it is not always so. After the reabsorption of a large effusion the precordial wall may become depressed.

"Very extensive or complete adhesion may be manifested by a movement of undulation experienced by the hand applied to the region of the heart.

"Retraction of the epigastric region and of the intercostal space corresponding to the point of the heart have likewise been indicated as signs of this cardiac synechia.

"In certain cases in which the organized neoplastic products have acquired considerable thickness and consistency, they may give rise to rubbing sounds of indefinite duration. The reduplication of the first sound of the heart may, in a certain number of cases, be attributed to a lesion of this kind. Finally, in a patient whose cardiac bruits represented a kind of measure of three stages, the first interval of which seemed shorter than the second, I found a band uniting the apex of the heart to the parietal layer of the pericardium. I have met with this bruit on other occasions without having had opportunities of verifying the organic condition after death."

Art. 50.—*On Endocardial Ecchymosis in Cerebral Hæmorrhage.*

By MM. Joffroy and Charcot.

(*Gazette Médicale de Paris*, No. 5, 1870.)

It is known that in patients who have died from cerebral hæmorrhage, besides the effusion of blood may be also found at various parts of the organism suffusions of blood in the form of more or less extensive and more or less deeply coloured ecchymotic spots. In cases of this kind ecchymoses are found in the meninges over the cerebral or cerebellar lobes, in the thickness of the epicranial aponeurosis, in the pleuræ, and in the gastric and intestinal mucous membrane.

In two cases of cerebral hæmorrhage MM. Charcot and Joffroy observed ecchymotic spots analogous to those just mentioned on the endocardium of the left ventricle.

In the first case these spots existed only over the columnæ carneæ. They were multiple, oval, and scarcely more than a demi-centimetre in extent. In making an incision over them these spots were observed to pass beyond the thickness of the endocardium, and to penetrate for some distance into the cardiac muscular tissue.

In the second case, in addition to these endocardial ecchymoses over the columnæ carneæ, there existed two other very deeply coloured small and rounded spots from two to four millimetres in diameter, which were seated on the mitral valve, while over the rest of its extent was retained its yellowish-white colour and its state of semi-transparence.

It is evident that we cannot think of explaining these ecchymotic spots by imbibition into the endocardium after death of the black blood filling the ventricle and lying in close contact with its inner surface. The small extent of these spots, their special coloration, their depth extending even into the thickness of the muscle, and their possible situation upon the mitral valve, will not allow of this explanation. It seems, on the contrary, to be a very rational step to join these ecchymoses of the endocardium with those of the meninges, the epicranial aponeurosis, the gastric mucous membrane, &c., and to associate all these effusions of blood under one explanation.

M. Charcot developes this idea by showing by several examples that under the influence of cerebral lesions, neuro-paralytic actions take place which may be the starting-point either of simple congestion or of inflammation. One may experimentally, as Schiff has shown, produce ecchymotic changes in the stomach and intestine by injuring the optic thalami. In man the same thing may be observed, and M. Charcot has had occasion to direct attention to facts of this kind. He thinks that the cardiac ecchymoses take part in the same series of phenomena. Besides, it is known that cerebral lesions may even give to rise inflammations, and that, under their influence, as after section of the pneumogastric nerve, pneumonia may be observed to arise.

Art. 51.—*Dr. Sibson's Croonian Lectures on Aneurism of the Aorta at the Royal College of Physicians.*

(*The Lancet*, March 26, April 2 and 9.)

LECTURE I.

On the 23rd of March, Dr. Sibson commenced his lecture with some remarks upon the general character of the symptoms of the disease he was about to speak of, and their great diversity—in some cases absent, in others most grave. Anguish most intolerable and apparently perfect health were alike consistent with the most deadly forms of the disease. Death might be sudden or gradual, without warning or preceded by the most alarming attacks of "cardiac asthma;" it might be caused by hæmorrhage, by cardiac syncope, by suffocation, by starvation, or by coma. The explanation of these varieties was not so much in the character or extent of the central malady, as in the relations of that to surrounding parts.

After a brief glance at the general conditions in an artery which permitted an aneurism to form, the lecturer proceeded to consider aneurisms of the ascending portion of the arch. Those of the sinuses of Valsalva were omitted as having been recently discussed by Dr. Firmin and Dr. Peacock. The great vessels of the neck, he observed, give a fixed bearing to the transverse portion of the arch, leaving its commencement free to change its position in accordance with the varying movements of the heart and body. The strong fascia which, arising from the diaphragm, passes over the pericardium, and on to the aorta and vessels at the neck, both strengthens the great vessels and secures

unity in their common movements during the respiratory play of the diaphragm.

Several cases were then related of tubular aneurism of this part of the arch, causing dilatation, from its origin to the great vessels, and producing incompetence of the valves. In the first there was a loud musical murmur, audible a foot from the body, and as low as the sacrum and groins, and a thrill where the murmur was loudest. The second case presented very similar symptoms, and in each after death the aorta was found not only dilated, but elongated, and the lower end so pushed down into the heart as to alter materially the relation of that portion of the heart. This case exhibited in perfection a peculiar symptom, which was also present in some of the others. The patient's breathing would for a short time become very difficult, then gradually become shallower and shallower till it ceased, and he fell asleep. In about thirty seconds he began to breathe again; the respirations were at first slow, then deep, and finally as laboured as at the commencement, the whole cycle lasting about ninety seconds, and then being renewed with remarkable regularity. For eight days this continued. He then began to spit blood, and with the occurrence of pulmonary apoplexy this peculiar symptom disappeared.

After glancing at the phenomena of "cardiac asthma," exhibited by some of his cases, in which the patient gasps for breath while air is entering freely into every air-cell of his lungs, the lecturer passed on to speak of the pouch-like aneurisms of this part of the aorta, and narrated several cases. In some of these the vena cava was pressed upon, and all the characteristic symptoms induced—swelling of head, neck, and arms, enlargement of veins, &c. In one of these there was a peculiar dark discoloration of the skin, of which only a few cases are on record. A case was related in which similar pressure effects were due to an intra-thoracic tumour, a condition not always easy to distinguish from aneurism. The guiding points in the diagnosis between the two were, the absence of a tumour from the intercostal spaces to the right of the sternum, the evidence of other tumours elsewhere, the presence of varicose veins on the surface of the chest and abdomen, a condition never met with in aneurism; the absence of a disproportion between the first and second sounds of the heart; the absence of enlargement and prominence of the arteries of the neck, and the absence of any marks of arterial disease in other parts of the body.

In conclusion, the lecturer dwelt on the great importance, as a sign of aneurism of this part of the aorta, of the tumour striking the chest-wall at the second interspace to the right of the sternum. In other aneurisms the pulsation may begin elsewhere, and then descend to that point, but in these the pulsation commences there, and if it moves, travels downwards.

LECTURE II.

Dr. Sibson commenced his second lecture (delivered March 25th), with an account of the sacculated aneurisms of the ascending part of the arch, which constitute fully one-half of the cases in which the aorta is affected with aneurism. The walls of the vessel, previously diseased, tend to yield to the pressure of the stream of blood, at two places espe-

cially; the right convex wall midway between the orifice of the aorta and the origin of the innominate, and at the top of the ascending aorta, at the angle between it and the transverse portion of the arch, where the curve of the aorta presents the first obstacle to the onward flow of the blood. The sac formed may produce no symptoms, the patient, in a small proportion of cases, dying suddenly from hæmorrhage into the pericardium, while apparently in perfect health. In half the cases the patients complain of difficulty of breathing, one-third are troubled with cough, and about the same number suffer from pain in the chest; symptoms due probably to pressure on the pneumogastric and sympathetic nerves. The aneurismal tumour presents itself in the second right intercostal space. There is no hoarseness or aphonia, stridulous or laryngeal breathing or dysphagia. Often the only symptoms which arrest attention are those of bronchitis, and the real nature of the malady is unsuspected till the end.

Two-fifths of the cases of sacculated aneurism exist close to the origin of the innominate. In illustration of these a very interesting case was quoted, in which Mr. Heath tied the carotid and subclavian arteries. The pulsation did not cease after the operation, but it was much less in degree, and the distress of the patient was much diminished. The return of the symptoms was attributed to persistent use of the right arm. The patient lived for four years after the operation. Aneurisms in this position advance towards the upper piece of the sternum, and having reached it, tend to erode the bone and to grow upwards and sideways, but more to the right than to the left, and to displace both the transverse and ascending portions of the arch, and press directly on the trachea, and indirectly on the œsophagus and left recurrent laryngeal nerve. Pain is often present at the top of the sternum, the breathing often tracheal, the voice husky or lost. Dysphagia is frequent from the indirect pressure on the œsophagus.

From the oblique position of the transverse portion of the arch, aneurisms of the anterior wall project to the left, those of the posterior wall to the right: the former encroach upon the left lung, stretching the adjoining nerves; the latter press upon the larynx, œsophagus, and recurrent laryngeal. Thus, according to the side of the vessel, the train of effects will be different; but it may be laid down that, just as in aneurisms of the ascending portion the tendency of encroachment is to the right, so in those of the transverse portion the encroachment is to the left. In many of the aneurisms of the posterior and right side of the vessel, the sac is quite small, but pressing backwards on the trachea, produces symptoms more formidable than those due to any other variety of aneurismal pressure. Dyspnœa in many cases is always present, and increases in paroxysms of such intense severity as to produce unconsciousness, and in one of these attacks the patient may die. The cause of the paroxysm is a temporary increased fulness of the sac; the cause of the cessation of the dyspnœa is the diminished pressure of the blood, consequent on the weakening of the heart's action during the period of unconsciousness. Tracheotomy in this dyspnœa is useless; it may, however, prolong life in another class of cases, in which the difficulty of breathing is due wholly, or in part, to laryngeal spasm from pressure on the recurrent nerve, in which laryngeal breathing accompanies or re-

places the tracheal stridor. In these cases, also, attacks of suffocative agony may threaten or destroy life as completely as in the cases of direct pressure upon the trachea. The character of the voice is remarkable—sometimes ringing, sometimes ventriloquial, sometimes squeaking, sometimes lost. Cough partakes of the character of the voice, and it is a cough without catch or stop; as one patient said, "he could never get hold of it." Pain is less frequent and less extensive than in cases of aneurism of the ascending or descending aorta, and has less of the shooting character. Dysphagia is a sign scarcely less constant than dyspnœa, and sometimes proves fatal.

LECTURE III.

Dr. Sibson's third lecture (delivered on the 30th of March) treated of the group of aneurisms which spring from behind the manubrium. This group includes those of the ascending aorta close to the innominate, those of the transverse aorta, and those of the innominate itself. In the latter the tumour is situated behind the right sterno-clavicular articulation; and this position affords the best distinction from aneurism of the ascending aorta close to the innominate. As a rule, the sac enlarges both downwards and upwards; so that, while it invariably ascends into the neck, it generally also descends into the chest. The trachea and œsophagus are both pressed upon. The carotid and subclavian arteries are affected by direct pressure, and by plugging up by fibrin. The subclavian is narrowed or obstructed in nine-tenths of the cases; and this forms a valuable indication of the position of the aneurism. The right carotid is affected only in one-half of the cases. Difficulty of breathing is as frequent, though not so great, as in those of the transverse; cough is also present. Pain in the right arm is frequent when the tumour, ascending into the neck, presses on the brachial plexus; paralysis and the other effects of nerve destruction may result.

The descending part of the arch is tied down firmly to the spine by the arteries which arise from it. Aneurisms of this part, therefore, undergo their development in one spot, and everything in that spot is wrenched from its position. The transverse aorta and the whole arch is forced forwards, and if the tumour extends upwards there may be distinct pulsation over the manubrium. This aneurism agrees with that of the transverse in coming in contact with the œsophagus and recurrent laryngeal nerve, and it catches the trachea at its upper part. It differs in winding round the left bronchial tube, and if at all large, that tube is flattened. When the aneurism arises from the posterior wall, as it does in one-half of these cases, it presses upon the bodies of the vertebræ and absorbs them into its wall; it passes upwards rather than downwards, and may even extend, step by step, over to the opposite side. The great splanchnic nerve is literally woven into the sac, and, in consequence, we have pains going to the epigastrium and a difficulty of swallowing, referred, not to the seat of the tumour, but quite behind the lower end of the sternum, while an earlier symptom is a dyspepsia most painful and uncontrollable. Difficulty of swallowing often occurs also from direct pressure on the œsophagus, which may become incorporated with the sac. Pain is often present in the tumour itself, but

not always, and not much stress is to be laid upon its actual character. In the few cases in which the aneurism becomes visible, it invariably points at the first rib, and thence travels downwards to the second space, or even lower. There is more or less dulness on percussion and bronchial breathing above the left scapula, and, very uniformly in Dr. Sibson's experience, increased vocal fremitus. A husky voice, laryngeal respiration, a very faint murmur, exaggerated heart-sounds, and enfeebled breathing over the left lung, complete a group of symptoms scarcely referable to anything else.

The symptoms of aneurisms of the thoracic aorta below the arch depend upon their position. Those of the upper end have the characters of the aneurisms last described, and in all there are the same effects upon the abdomen—pain, affections of the stomach and intestines, and not unfrequently obstinate constipation.

The reason why a murmur in these cases is sometimes present, sometimes absent, was correctly pointed out by Sir Dominic Corrigan in *The Lancet* for 1829. The looseness of the sac favours a murmur. When tight, nothing is heard but the sound of double pulsation. Some experiments of Dr. Sibson's fully confirm this statement.

The leading points in the treatment of these affections are—to keep up the nutrition of the patient, to relieve pain, and to lessen the force with which the heart sends the blood into the sac. The latter may be accomplished, first, by rest, and secondly, by reducing the volume of the blood upon which the heart has to act. As far as Dr. Sibson's experience goes, this may be done with absolute certainty by bringing the quantity of the liquid down to not more than a pint a day. Every case submitted to that treatment experienced the value of it. In one instance in which the liquids had been thus limited with benefit for several months, the patient's resolution gave way during a hot summer; he quenched his thirst by large quantities of water, and in two days the aneurism burst.

Art. 52.—*Specimen of Congenital Malformation of the Heart.*

By Robert Hunter Semple, M.D.

(*The Lancet*, January 18.)

At a meeting of the Pathological Society of London, held January 4th, Dr. Semple exhibited a specimen of congenital malformation of the heart in a child ten months old, affected with cyanosis. The child was brought as a patient when three months old, suffering from cyanosis. No treatment was recommended, and no hopes of improvement were entertained; but the child lived till about ten months old, when death occurred without any remarkable symptoms. The body was thin and emaciated, but the only morbid appearance discovered was some red hepatization of the lower lobe of one of the lungs. The heart presented the following conditions:—The right and left auricles communicated by a patent foramen ovale. The left ven-

tricle was small, and presented two openings—namely, the auriculo-ventricular, and a round opening through the septum ventriculorum. This latter opening was of about the size of a large goose-quill, situated at the upper end of the ventricular septum. The right ventricle was larger than the left, and presented three openings—namely, the inter-ventricular opening just described, the auriculo-ventricular opening, and the opening into a large artery, which, from its construction, position, and relation, must be regarded as the aorta. The ascending aorta was dilated, and the convexity of the arch of the aorta gave off the innominata, and the left carotid and left subclavian in their usual order; but from the concavity of the arch there proceeded downwards the ductus arteriosus, quite patent, and giving off a pulmonary artery on each side. But instead of communicating with a pulmonary arterial trunk, the ductus arteriosus continued its course obliquely downwards, and terminated in a pointed cul de sac at the base of the heart, near the origin of the aorta.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 53.—*Therapeutics of Chronic Constipation.*

By JOHN KENT SPENDER, M.D. Lond., Surgeon to the Mineral Water Hospital and to the Eastern Dispensary, Bath.

(*Medical Times and Gazette,* February 19.)

Dr. Spender does not think that the usual professional treatment of chronic constipation of the bowels is very satisfactory. It appears to aim at the relief of the one obtrusive symptom, and to help the patient out of a present difficulty without sufficient reference to the future. It removes the obstacle of to-day by legitimate and easy means, but the obstacle of to-morrow is not prevented; hence what is done to-day must be done again to-morrow, and the remedial formula has an awkward *ad infinitum* look about it. The author's object in this paper is to try and raise a point of every-day practice to a scientific level.

The peristaltic action of the bowels is essentially a quiet and unfelt reflex function. Assuming that the voluntary movements subsidiary to defecation are efficiently performed—he means the pressure exercised by the muscles of the abdomen on its containing viscera—the fault lies mainly in a defect of the peristaltic action: either it is too slow, or it has too little force, or both force and time may share the torpidness so characteristic of the phlegmatic and scrofulous temperaments. And the root of this state is a sluggish habitude of the nervous system; an insusceptibility which is strictly congenital, which may be roused for a while by dynamic and even by physical stimuli, but which tends to lapse by inherent vice into its chronic torpor. This is the key to any right theory of obstinate constipation of the bowels. The term implies simply that a person being otherwise in tolerable health, the excretory function of the alimentary canal is performed at rarer intervals than is compatible with complete health. And a twofold discomfort arises—partly mechanical, and partly depending upon a contamination of the blood by excrementitious matters.

Assuming that we have before us a case which clearly deserves the name of constipation of the bowels, the therapeutic inquiry is, how shall it be treated? And by the word treatment Dr. Spender pushes aside all temporary refuges and expedients, all drastic doses and exosmotic drains which merely empty the bowels *pro hâc vice* in the fashion of flooding out an unclean sewer. It may be necessary to do this once as a preliminary step, but what ought to come next? The object of philosophic medicine is to enable the patient to live without medicine—to realize such a state of health that the medicine (*i.e.*, the medium of health) is no longer required. To purge again and again largely and painfully for a chronic disorder is to clear away a nuisance without removing its cause, and therefore the nuisance must again and again recur. Galen and Hippocrates would have done more than this, any herbalist or quack can scarcely do less.

The plan which Dr. Spender now proposes does bestow some care on the future, and professes to be, so far, curative in its operation. It comprises four therapeutic factors; (*a*) minute and frequent doses of watery extract of aloes, very rarely of extract of colocynth; (*b*) a dose of sulphate of iron (gr. jss or ij) always combined with each dose of the direct aperient; (*c*) regulation of the diet; (*d*) constitutional exercise. The author writes chiefly of factors (*a*) and (*b*). The quantity of extract of aloes, in all but extraordinary cases, he says, should not exceed one grain. It is conveniently given in the form of a pill With this pill there should always be mixed a dose of sulphate of iron varying from one to three grains; this is the essential point of the treatment. Any other tonic of the neurotic kind cannot supply the place of the iron; iron is not only *facilè princeps*, but is not interchangeable by anything else. Extract of nux vomica may be added, if the prescriber pleases, as an ornamental appendage or as a means of blending the other constituents together; and belladonna is a remedy of definite auxiliary power, but both these drugs, *quoad* constipation of the bowels, are uncertain or unsatisfactory, and rarely do permanent good. Dr. Spender begins, then, by desiring an adult patient to take a pill composed as above three times a day, immediately after the principal meals. He is cautioned that at first there will be probably no apparent effect, and that two or even three days may pass before any medicinal evacuation of the bowels takes place, perhaps even then difficult and discomforting. But within the next forty-eight hours there will be most likely an evacuation of the bowels once or possibly twice in the day; *but nothing approaching to purgation ought ever to be permitted*, and therefore the patient must be instructed, on the occurrence of the first loose motion, to withhold a pill, and to take only one in the morning and one in the evening. He then continues for a time his morning and evening pill, and is pleased to discover that so slender a medicament has such a decided effect. Not improbably, at the end of another week or fortnight, he is compelled by the same reason as before to drop another pill, and the same result is now brought about by one pill daily, as was originally produced by three pills. Within another month, he may reduce his allowance of medicine to a single pill once or twice a week; and finally, his whole scheme of medical treatment becomes merely preventive in its

design and scope, and he takes a pill occasionally for the sake of maintaining health and warding off old troubles.

When there is a real or fanciful difficulty in the administration of pills, the best way of carrying out the plan above described is by combining the *mistura ferri composita* with the *decoctum aloës compositum*, the doses being determined by an application of the same principles.

The author says he cannot lay too much stress on avoiding anything like an over-purgative effect by the drugs employed. If on this account the treatment has on any occasion to be stopped, there is so much time lost and so much ground to be retraced. A patient may, unintentionally, exaggerate his difficulties, but the skilful practitioner will not therefore depart from the fundamental principle of minute and frequent doses of his medicine. In this way nature is coaxed and assisted, instead of being forced and worried; and Dr. Spender declares without hesitation that only by this means can a sure and permanent benefit be realized.

The urgency of regulating the quantity and quality of the food is so obvious, that the author adds nothing to what has been so well laid down by systematic writers. The necessity of constitutional exercise—a definite amount every day—is equally clear, and its physiology requires no illustration here. The serious and ingravescent forms of constipation which are secondary to stricture (cancerous or fibrous) may be temporarily relieved by the plan Dr. Spender has sketched; but ultimately the obstruction will defy all ordinary remedies, and our suspicions should be aroused to the possibility of organic disease, whenever a retrograde step occurs again and again after apparent success has been attained.

Art. 54.—*Treatment of Diarrhœa at the Evelina Hospital for Sick Children.*

(*The Lancet*, January 22nd.)

One of the most frequent diseases, if not the most frequent, among the children of the poorer classes is diarrhœa. Coming on at any age, and arising from many causes, it carries off in a large proportion those who have been previously enfeebled by disease. For information concerning the treatment of diarrhœa at this hospital, we are indebted to Dr. Kelly, assistant-physician. The frequency of these cases may be seen by the following table, which shows the number of medical cases which came to the hospital, and the relation to them of those suffering from diarrhœa.

	Total No. of Cases.	*Diarrhœa Cases.*	*Ratio.*
July	465	92	1 in 5
August	539	111	1 in 4·85
September ...	568	70	1 in 8
October ...	557	43	1 in 13

Very many cases of diarrhœa arise, as every one knows, from improper feeding. In these a small dose of castor-oil, to begin with, seems to afford much relief, and then the chief thing to do is to insist upon proper diet. The child should be fed at proper intervals, and not too often; solid food should not be given, but thin arrowroot, or milk and water substituted. Care should be taken that the bottle and tub from which

food is taken are perfectly clean, as much harm may ensue from the milk turning acid before the child takes it. It often happens that after weaning, a child is put too soon on a solid diet, or has something given which disagrees with it. Here too one dose of castor-oil (half a drachm to a drachm) in a little mucilage does good by removing the foreign body; after that salines may be given, and the child put on a proper diet.

When diarrhœa occurs with teething, the child, in addition, is cross and peevish, and there is also generally more or less febrile excitement. Purgatives here appear of little or no use. It seems best, Dr. Kelly thinks, to give, for the first two or three days, a saline mixture, and then, if the purging continue, logwood and catechu, with carbonate of soda, or chalk, are of great use. It does not often happen that sickness or distension of the abdomen follows the use of an astringent; on the contrary, the child seems easier, and is less fretful. In many of these cases an alkali seems beneficial, and one part of lime-water may be mixed with three or four parts of milk, and given frequently during the day.

In many cases of pertussis, children suffer from diarrhœa after every fit of coughing, and very frequently they have prolapsus ani from the violence of the expiratory efforts. An occasional dose of rhubarb and grey powder may be given, and the child may be put on steel wine to improve the general health. This plan seems to have answered extremely well among the out-patients.

The above cases, however, do not often terminate fatally; but there are several children with thin, wizened, old-fashioned looks, who have for some time been suffering from starvation and neglect, or are the subjects of hereditary syphilis, and in these a fatal result is more frequent. It is not of much use their taking the breast, inasmuch as the mother's health is generally in such a bad condition, nor can the parents often observe those measures which are needful for the child's recovery.

The child may be fed with warm milk and water, or thin arrowroot, to which a few drops of brandy may be added, and a small quantity of beef-tea may be given twice a day. In these cases small doses of steel wine often seem to do good; and if the case is syphilitic, one-grain doses of grey powder every night are useful.

Opium is not given, but pain is relieved by hot fomentations and linseed-meal poultices; flatulence may be removed by adding aniseed or caraway-water to the mixture. But in all cases the most important part of the treatment consists in paying a proper attention to the child's diet.

Art. 55.—*On Hæmatemesis and Perforating Ulcer of the Stomach.*

By George Johnson, M.D., F.R.C.P., Physician to King's College Hospital; Professor of Medicine in King's College, London, &c.

(*British Medical Journal*, March 26, 1870.)

In directing attention to the treatment of the two most serious and alarming accidents of gastric ulcer, hæmorrhage and perforation, Dr. Johnson says:—

"Absolute rest in bed is essential. Then, while the tendency to bleeding continues, no food should be introduced into the stomach; but the patient should be sustained by nutritive enemata. The introduction of food into the stomach excites an increased afflux of blood to the organ. This alone may cause a return of the bleeding; and with the increased supply of blood there is a copious secretion of gastric juice, which, coming in contact with the ulcer, may dissolve the recently formed coagula that had plugged the bleeding vessels. The bleeding patient therefore should lie still, sip iced water, and be fed by the rectum. The most useful styptics in these cases are, tannic acid in ten-grain doses, tincture of perchloride of iron in twenty-minim doses, or oil of turpentine in twenty-minim doses. Each of these medicines I have seen speedily arrest the bleeding in different cases. In one case, the tannic acid excited nausea, and it was discontinued. In any case, I believe that the exclusion of food from the bleeding stomach is of more importance than the administration of medicine; yet I should always give one or other of the styptics that I have mentioned, if the bleeding continue in spite of abstinence and iced water. When the bleeding has ceased, liquid food may gradually and cautiously be given by the stomach; then solids; and lastly, iron is a most valuable restorative tonic.

"In the treatment of perforation of the stomach, the necessity for keeping the stomach free, not only from food, but from medicine, is absolute. This accident is generally fatal; but there are on record a few cases in which a patient has recovered after symptoms of perforation had occurred. One such case has been published by the late Dr. Hughes in the *Guy's Hospital Reports* (1846), and one case occurred in my own practice. On Christmas-eve, 1863, I saw, in consultation with Mr. Henry Lee, Mrs. T., aged forty. About two hours before, she had been seized suddenly in the street with severe pain, rapidly extending over the whole abdomen. She felt faint, and vomited, and had to be taken home in a cab. When I saw her she had excessive pain and tenderness over the whole abdomen; the pain being much increased by pressure, and by any movement of the body. The pulse was rapid and feeble, and the skin cold. I learnt that for several months past she had suffered from pain in the region of the stomach, increased by taking food. She had frequent acid eructations, for which she was in the habit of taking calcined magnesia; and, about three months before, she had on one occasion vomited a large quantity of blood. Here there was a distinct history of chronic gastric ulcer; and now the symptoms pointed clearly to perforation and consequent peritonitis. Acting upon that view of the case, we gave every two hours an enema consisting of half a pint of beef tea, half an ounce of brandy, and fifteen minims of laudanum; by the mouth, only an occasional dessert-spoonful of water or barley-water to allay thirst; perfect quietude in bed; hot fomentations to the abdomen. Under this treatment, the symptoms gradually subsided. As the pain abated, the laudanum was discontinued; but she was fed entirely by the rectum for nearly three weeks. She then began to take by the stomach small quantities of bread and milk, beef-tea, and arrow-root. For the first two or three days of feeding by the stomach, the food was rejected by vomiting; but this soon subsided, and she steadily regained strength. She called at my house on February 19th, 1864.

She was then quite convalescent; but she had an anæmic appearance, and still complained of her old dyspeptic symptoms. I have not since seen or heard of her.

"In this case, recovery having taken place, it is of course not certain that there had been perforation of the stomach. The history, however, leaves very little room for doubt. This, at any rate, is certain: that the only chance of recovery from perforation of the stomach is afforded by giving both food and medicine by the rectum, and excluding both from the stomach until the rent has been firmly closed.

"Many years ago, on post-mortem examination of a case of perforating ulcer of the stomach, I found that a large pill had passed through the perforation into the cavity of the peritoneum. There can be little doubt that much food and irritating physic has often taken the same course in similar cases. Let us be careful to avoid a practice that of necessity must aggravate the patient's pain and peril."

Art. 56.—*Specimens of Ulcer of the Stomach.*

Exhibited by Charles Murchison, M.D., F.R.S.

(*The Lancet*, January 15.)

At a meeting of the Pathological Society of London, on December 21st, Dr. Murchison showed specimens of ulcer of the stomach. The cases had an obscure history. A woman, aged forty, died last summer. She had been intemperate, but her health had been tolerable. She complained of nausea and of pain, not increased by food. She had vomited a great deal of blood. The liver was rather small, but there was no evidence of portal obstruction. The hæmatemesis was checked for a time, but it returned profusely, and she died from loss of blood. The liver was small, but not diseased. The stomach, after careful examination, presented a very small ulcer in the great cul de sac. In its centre was a minute orifice leading into an artery. There were two small ulcers close by, but no signs of inflammation. The second case occurred in a male, aged twenty-eight, who had been a soldier, and possessed of good health till six months before, when he became faint and brought up much blood. Again he was seized suddenly with nausea, vertigo, and weakness; hæmorrhage again occurred, the blood being bright red. The hæmatemesis caused his death. An exceedingly minute ulcer existed close to the œsophageal opening: its orifice was rounded as if of some standing. His liver was cirrhosed and syphilitic.

Art. 57.—*On the Etiology and Treatment of Simple Ulcer of the Stomach.*

By Dr. C. Gerhardt.

(*Wiener Medicinische Presse*, 1868; *Archives Générales de Médecine*, Décembre, 1869.)

Dr. Gerhardt admits that ulceration of the stomach may be developed under the influence of the gastric juice acting upon a portion of the walls

of the organ deprived of its normal circulation. The disturbances of circulation may be produced by embolism from disease of the heart, and probably also in tuberculous subjects and in those affected with dilatation of the bronchi; by a fatty degeneration of the arteries in chlorotic and hysterical patients; by extravasations of blood deposited in the mucous membrane in consequence of injuries of the gastric region or violent efforts at vomiting; finally, by gangrene of a portion caused by the employment of corrosive medicinal agents. Dr. Gerhardt thinks that when once the disturbances of circulation are established, the ulceration will be developed the more rapidly the greater the difference there be between the quantity of acid fluid contained in the stomach, and the quantity of blood circulating in the arteries of the organ, and intended to neutralize the acidity of these fluids. Hence the frequency of ulcers in drunkards, and in individuals exposed to the consequences of famine; in the same manner may be explained the development of ulcers in chlorotic patients. The quality of the gastric juice and the nature of the food have also a considerable influence upon the development of ulcers. The more pepsine and hydrochloric acid the gastric juice contains, the lesser part will it take in the digestion of protein substances; the more the acid is developed in the stomach, under the influence of abnormal fermentation from the ingestion of amylaceous, saccharine, alcoholic, or fatty matters, the more rapidly will the ulcer progress.

The aim of the treatment should be the protection of the ulcerated surface from the digestive action of the gastric juice. It should consist in the almost exclusive ingestion of milk, eggs, and meat, and in avoiding starchy or saccharine articles of food which give rise to the rapid development of acid; the meals should be frequent, in order that the action of the gastric juice upon the food may not be interrupted. It is necessary to avoid copious repasts, and especially articles of diet capable of swelling in the stomach; these, in fact, distend the base of the ulceration, excite pain, and expose the patient to the risks of perforation.

When there is an extensive development of gas, advantage will be derived from the internal administration of carbon, and the application of cold compresses externally. These means sometimes suffice to bring about a cure.

The employment of narcotics should be rejected; they produce no favourable result, and disturb the functions of digestion. One may, however, have recourse, in cases of obstinate vomiting, to the subcutaneous injection of morphia. Whenever there is acute pain recourse should be had to astringents, especially to the perchloride of iron, the nitrate of silver, and the sub-nitrate of bismuth. For patients who are weak and liable to hæmatemesis, Dr. Gerhardt particularly recommends the repeated administration of perchloride of iron in three or four drop doses to a glass of water. It is recommended in cases where the seat of the ulcer is known, that the patient be ordered to take such a position that the ulcer and the ingested fluid may come in contact. The nitrate of silver is given in one-grain doses in pills or in solution; bismuth is prescribed in doses of from six to ten grains.

Art. 58.—*Hydatid Disease of the Liver.*

By Stephen H. Ward, M.D. Lond., Physician to the Seamen's Hospital, "Dreadnought," and to the Hospital for Diseases of the Chest, Victoria Park.

(*The Lancet*, April 2.)

In this paper Dr. Ward adduces one or two practical illustrations of the symptoms, diagnosis, course, and treatment of the affection when implicating the liver.

Hydatid tumour of the liver is of rare occurrence among sailors. Dr. Ward has had but one case under his care at the Seamen's Hospital in the last ten years. Mr. Busk had but two cases during his long connexion with this institution; and Dr. Budd, during his shorter association with it, only one. It would seem, also, according to Morehead, to be rare in India; this physician having met with only two cases there, one of which had been developed in Europe.

"The disease," Dr. Ward writes, "generally exhibits itself as a tumour, of variable size, situated either in the right hypochondrium or in the epigastric region, evenly globular in its early stages, firm, resisting, with sense of elasticity and sometimes of fluctuation. Frerichs also notices, as peculiar to such tumour, a vibration or trembling which is felt when the surface is compressed gently by two fingers of the left hand and struck abruptly with the right hand; but he does not consider such symptom as constant, it having been present in only one-half of his cases. If the tumour is situated behind the liver, it will, as it developes, push this organ forwards, flatten it, and increase the area of dulness. The tumour may last for a considerable time, and increase to some extent, and the patient nevertheless remain free from constitutional disturbance, perform all his functions well, and keep in good condition. When, however, it has attained to a large size it will give rise to various symptoms: to a sense of tightness and distension; if it presses upwards, to embarrassed breathing, irritative cough, palpitations; if upon the abdominal viscera, to interference with their functions. In the case presently to be recorded, among the prominent symptoms was a dull, gnawing pain, extending from the right lumbar region forwards, and somewhat paroxysmal. Irregularity of bowels was another constant symptom. At last, from pressure upon the portal vein, there was some ascites, and from pressure on the right iliac vein, œdema of right lower extremity. In Morehead's cases there was present a gnawing, paroxysmal, epigastric pain, which was worse when the stomach was empty, and was accompanied with marked dyspeptic symptoms.

"Hydatid tumour of the liver is not always easily diagnosed; but the peculiar features of the tumour which I have indicated, and its compatibility, up to an advanced stage, with a good state of health, will point to its nature. Abscess of the liver may be distinguished by local and distant pain, the frequent antecedence of dysentery, the existence of constitutional symptoms—as hectic fever, rigors, &c. Cancer of the liver will be marked by the irregularly nodulated surface of the enlarged viscus, by the rapid development of the disease, and the cachectic aspect, wasting, and loss of power with which it is associated.

I saw a little time since, in conjunction with my friend Mr. Ross, of the Commercial Road, a patient who had an epigastric tumour of even spherical shape; but the strong pulsations, elevating the head as one auscultated it, the bruit traceable along the aorta, before and behind, pointed to its aneurismal nature. The site, the pyriform shape and limited size, and the usual accompaniment of jaundice, will distinguish from hydatids the tumour caused by a distended gall-bladder. There was some difficulty in determining the nature of the affection in the subject of my second case; but careful percussion and palpation led to correct diagnosis, and showed that the tumour was extra-pleuritic, and connected with the left lobe of the liver. Frerichs thinks that hydatid disease of the liver is more frequently confounded with localized pleuritic effusion at the base of the chest than with any other affection. He shows that the same physical signs—as dulness on percussion, absence of vocal thrill, intercostal fluctuation—would be present in both cases. He rests the diagnosis on the fact that the line of dulness on percussion would present a curve, the convexity of which would look upwards in one affection, downwards in the other. The following case, which was for some months in the Seamen's Hospital, affords an excellent illustration of the affection under consideration, and of the post-mortem appearances afforded by a hydatid cyst in an advanced stage of development.

"Case 1.—J. H——, aged thirty-six, a sailor, was admitted into the *Dreadnought* on Sept. 19th, 1861, for an abdominal tumour, incapacitating for work. He states that he has made many voyages to the East and West Indies, but has never remained ashore for any long time. Fourteen years ago, in Jamaica, after drinking new rum and exposure at night, he had fever, which from his account must have been yellow fever. Since then has had no other illness. Some months before he noticed anything amiss with him he had been at the Australian gold-diggings, where he drank hard. He observed for the first time about four years ago that his right side was enlarging beneath the small ribs, and that he had occasional gnawing pains over the site of this enlargement. Since then the swelling has gradually increased in size, and for the last two years and a half he has been unable to work. He has latterly had a dull, aching pain extending from the right lumbar region forwards, and for a long time has had gradually increasing dyspnœa. His bowels act irregularly; sometimes there is no evacuation for six or seven days, and then he is much purged; stools usually of light colour. Has never had vomiting or jaundice. Urine free, of good colour, and free from albumen. He has been gradually losing flesh for the last year and a half, and his strength now fails much. A tumour occupies the abdomen as low down as a line half-way from the umbilicus to the pubes, most prominent on the right side, where the ribs are much elevated; it extends also into the left hypochondriac and lumbar regions; it is firm and elastic to the touch, and with gentle tapping indistinct fluctuation is felt. In the middle of October he complained at times of what he called a deadening pain in the loins. There was now some fluid in the abdominal cavity and œdema of right leg and thigh.

"Oct. 20th.—Tumour firm and elastic, as before, and increasing in size; percussion now elicits a marked vibratory thrill. A night or two after this date he began to vomit much thin fluid of a dull, yellowish-green colour; this continued through the night, with considerable pain over the abdomen. The day following much prostration ensued, and he gradually sank.

"*Post-mortem Examination.*—On removing the abdominal walls over the right part and lower margin of the liver, there was a thin layer of recent lymph, and the margin of the liver extended to the supposed limit of the tumour. On lifting up the liver slightly the hand came upon a firm elastic tumour, which was closely connected with the liver above, and covered by it in its whole anterior extent. In attempting to remove the tumour whole from its attachments behind, the knife unfortunately entered it, and a large quantity of clear, pale-yellow, limpid fluid escaped—about a gallon in all. When removed the tumour was laid open, and found to consist of one immense hydatid cyst; its proper membrane in parts being about a quarter of an inch thick, and in some parts looking like boiled white of egg, in others having a gelatinous consistence. The cyst was connected with nearly all the left lobe of the liver and a large part of the right; and the latter, much flattened out, covered a considerable part of its anterior wall. Six or eight secondary cysts were found in the mother cyst, varying in size from a pea to a hazel nut. Echinococci were abundant in the fluid, and in the matter scraped from the walls of the cyst.

"Hydatid tumour of the liver may last for years, and be compatible with an average state of health, or at an early or advanced period of its existence it may terminate in one of the following ways:—

"1. As in the case just narrated, it may from its bulk and position press upon and interfere with vital parts and organs. Pressure upon the large venous trunks may induce ascites and dropsy of the lower extremities; pressure upon the stomach and intestine may obstruct functions connected with assimilation, induce failure of strength and flesh, and ultimately death from exhaustion.

"2. The tumour may contract adhesion with the diaphragm; ulcerative action through this may be set up, and either (*a*) discharge of contents of tumour may take place into the pleura, and fatal pleuritis result, or (*b*) further adhesions and ulceration may effect communication with lung, pneumonic symptoms be the result, and the contents of the sac, mixed with products of inflammation, be expectorated.

"3. Adhesions may be effected with some part of the alimentary canal, and the contents of the sac be discharged by vomiting or stool.

"4. Rupture of the sac may be effected by blow or otherwise, the contents be discharged into the peritoneum, and fatal peritonitis result.

"5. Frerichs and Budd notice a possible cure by the obliteration of the sac by a putty-like matter gradually forming within it, which involves, or perhaps results from, the death of the cysts.

"6. The tumour may contract adhesions with the parietes, and point externally, and be opened, or evacuate its contents by natural process. A blow or pressure may previously have set up suppurative inflammation in the sac, and then the risk will be greater, and there will be difficulty, as in Mr. Knipe's case (reported by me in the *Lancet* for October, 1868) in distinguishing from hepatic abscess.

"In the earlier stages of this affection a fair trial may be given to iodide of potassium, which has been found by some practitioners to be efficacious in producing absorption of the contents of the sac. So long as the tumour induces no distressing symptoms, and does not interfere with the functions of any organ, there is, perhaps, no indication for operation. When, however, the tumour is increasing prominently, is the seat of pain or distressing distension, and is causing, as in case to

be cited, such symptoms as difficulty of breathing, &c., it will be well at once to have recourse to puncture. Indeed, it is a question whether in all cases, when the disease is sufficiently developed, while the cyst is yet perhaps but single and the walls elastic, it is not the best course to puncture with a fine trocar, and let out the contents. I remarked, when treating of abscess of the liver, that modern surgery had taught us that we might take more liberties with the peritoneum than formerly we should have dared to do; and by attention to precautionary measures, which were practised in the case I now introduce, the danger attending the puncture of an hydatid tumour may be reduced to a minimum.

"Case 2.—E. A——, aged thirty-six, a married woman, who had been residing in a healthy part of Essex, was admitted under the care of Dr. Ward, at Victoria-park Hospital, on August 3rd, 1867. Has had no family; previous health always good. She states that she has not been in the habit of leaning upon her stomach; but that fourteen years ago she struck her stomach against the back of a chair. She has for many years felt tenderness in the epigastrium. Three years ago she suffered for a time pain in the left hypochondrium, with dyspnœa. This pain went away for a year, but has recurred three or four times since, lasting on each occasion only for a few days. Six years ago she perceived swelling in the epigastrium. This has increased, and she has suffered considerably from pain in the back and beneath the shoulders.

"*Symptoms on admission.*—A healthy, strong-looking woman, with dark hair and florid complexion; was able, until lately, to work as usual, but had to give it up on account of pain in the back. Pulse 92, full and regular; breath short upon exertion; tongue clean, appetite good, bowels regular. There is a large tumour, occupying the whole of the left hypochondrium, and part of the epigastrium. The dulness extends two inches to the right of the median line, and to within two inches of the umbilicus; it is continuous with that of the liver and heart, and is separated by a resonant interval from the spleen. The false ribs and cartilages on the left side bulge considerably. The tumour is tense, elastic, with deep fluctuation. There are, apparently, no adhesions between it and the parietal wall. At its higher portion, in the median line, there is some tenderness, and at the lower part a bruit can be heard on pressure. She complains of a gnawing pain in the back and between the shoulders, which disturbs her sleep. Catamenia regular.

"August 20th.—A bandage was applied over the lower part of the abdomen, and of the tumour, which was then tapped by Mr. Power, the resident medical officer, at the tender spot with a fine trocar; thirty-seven ounces of fluid were evacuated, at first clear, afterwards of a pinkish colour, and turbid. Digital pressure was kept up for an hour; a compress was then placed over the puncture, and a flannel bandage was firmly applied. Forty drops of hydrochlorate of morphia solution were given. On microscopic examination, the fluid was found to contain a quantity of red corpuscles and cells of the same size, upon which could be seen a circle of very small spines.

"21st.—Has passed a fair night; very little pain, chiefly in the back and side, but not in the neighbourhood of the puncture. Is quite comfortable; skin soft and warm; pulse and respiration natural; bowels not opened since the tapping. To be kept perfectly quiet in bed, and on light diet.

"27th.—Has progressed without a single bad symptom; her only annoyance having been the pressure of the bandage. Bowels acted yesterday for the first time since the operation. Has been taking solid food for the last two days.

"Sept. 3rd.—Bandage removed. Upper line of dulness not altered; lower, nearly one inch higher. Abdominal wall does not move over the tumour. No fluctuation. Prominence of left hypochondrium continues. Patient allowed to sit up.

"On Sept. 4th a plaster of ammonia with mercury was applied, and over it a linen bandage; and on the 7th the patient left in good health.

"On Jan. 24th, 1868, she wrote, in answer to a note respecting her health: 'I am happy to say that I have not felt anything of my side; only sometimes I have felt a little fulness in it, and a slight pain in my back, but nothing of any account.' From an account received in Dec. 1868, it appears that the side is again enlarging; so that the patient will probably come again under treatment."*

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 59.—*On Certain Morbid Changes in the Nervous System, Associated with Diabetes.*†

By WILLIAM HOWSHIP DICKINSON, M.D.

(*Medical Times and Gazette*, March 19.)

Diabetes has hitherto been regarded as a functional disorder, and has been attributed to erroneous action rather than structural change. This view, however, must be looked upon as only provisional. Function is simply the expression of structure; structure and function are as inseparable as cause and effect. Where, as in diabetes, function is permanently altered, it almost follows of necessity that there should be equally abiding changes in the mechanism of the organs concerned. In this belief the various organs of diabetic subjects were subjected to a searching examination, and it was found that the nervous system was the seat of important alterations, an observation which gained significance from the discovery of Bernard that puncture of a certain part of the medulla oblongata rendered the urine saccharine. The details of the examination of the organs in five diabetic subjects were laid before the Society, and the pathological changes in the brain and cord illustrated by a series of drawings, representing their naked-eye and miscroscopic appearances. The results obtained in the five cases are briefly these:—Peculiar morbid changes were constantly found in the cerebro-spinal system. In all the alterations were of the same nature, and, for the most part, in the same situations. The earliest alteration recognised was a dilatation of the arteries. This was followed by a degeneration of the nervous matter at certain points external to them. An extension of the degenerative process occasioned destruction and

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* This case came again under notice last December. The tumour was then much larger than at first, and was causing great distress; and it was deemed advisable to have recourse to tapping. Mr. Gay and Dr. Ward visited the patient, with the purpose of performing the operation; but, shortly before their arrival, an opening had been effected into the alimentary canal, and the fluid contents of the tumour had been discharged by the mouth.

† Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, February 8.

excavation of the tissue around the vessel. Cavities were thus produced, often large enough to be striking objects even without the microscope, and contained bloodvessels, extravasated blood, grains of pigment, and the products of nervous decay. Finally, the contents appeared to become absorbed, so that simple vacuities were left. As to their situations, the changes occurred in constant association with arteries. They were found in every part of the spinal cord and encephalon, attaining their greatest development in the medulla oblongata and pons Varolii. The excavations were frequently in connexion with folds of pia mater, and were often disposed with lateral symmetry. Several spots were found to be affected uniformly in all the cases examined—viz., the olivary bodies, the vicinity of the median plane of the medulla, the grey matter of the floor of the fourth ventricle, and in particular a spot just internal to the origin of the facial nerve. This point presented a remarkable sameness in all the cases, a large excavation lying generally on both sides in connexion with a process of pia mater. Another spot, which in four of the five cases presented a considerable cavity, was found near the front of the pons in the median line, also in connexion with the pia mater. The optic thalami and corpora striata were involved to a slight extent. The septum of the ventricles, and the white matter of the convolutions, displayed the alterations in a remarkable manner, as also did the corpus dentatum of the cerebellum. The changes especially affected the white matter, though the grey matter at the floor of the fourth ventricle and of the spinal cord are exceptions to this statement. The cells of the grey matter were generally perfect. The deterioration was not general, but was limited to the vicinity of the arteries. Such parts of the sympathetic system as were examined—namely, the upper cervical and semilunar ganglia—were apparently natural. The only constant change found in the viscera was epithelial accumulation in the liver and kidneys. It would seem from the foregoing observations that diabetes is associated with an organic change, which may be briefly described as a destruction of the nervous matter along the arteries of the brain and cord. From the uniformity with which this was found in the five cases examined, it may be presumed that there was a more than accidental connexion between the symptoms of diabetes and the peculiar state of the nervous centres. The question presents itself, whether the lesion is a result of the disease or its cause. The association of the morbid action with the bloodvessels suggests that it may be connected with the state of the blood. We know that the blood in diabetes is altered by the presence of sugar; is it to this that the deterioration of tissue is due? Several considerations militate against this, at first sight, probable explanation. The veins and capillaries appeared to take no share in the morbid process, though equally permeated by diabetic blood, which, in the capillaries at least, is brought into more intimate relation to the tissues than in the arteries. If the changes in the tissues were directly due to the altered composition of the blood, the capillaries could hardly fail to distribute its morbid influence. Besides this, the blood traverses the whole body without producing in any other organ an analogous failure of nutrition. We may probably abandon the view that the changes described are consequent upon the diabetic state of

the blood, and have recourse to the supposition that the nervous alterations are antecedent to and productive of the glucosuria. The following considerations may be mentioned in favour of the latter supposition. No organic change has been found elsewhere to which the saccharine state of the urine can be attributed. The alterations in the brain are, in their nature and situation, exactly such as physiology has shown to be capable of producing that symptom. Further, we are the more disposed to regard the nervous changes as primary by the fact that alterations similar in kind, though differing in distribution, occur as belonging exclusively to the nervous system, quite independently of diabetes. This is the case particularly in the general paralysis of the insane. Dr. Lockhart Clarke has, since most of the preceding observations were made, described the lesions in that disorder, and shown that though differing somewhat in situation, they are of the same nature as those here described. The conclusion that diabetes is primarily and essentially a nervous disease accords with all that is known of its natural history; indeed, the opinion has, of late years, been gaining ground, that the disorder is due to altered nervous action, though no structural change was known to account for it. The urine often becomes saccharine in consequence of injuries of the head, apoplectic seizures, intracranial tumours, and other sources of cerebral irritation. These traumatic and accidental forms of the disease are, as we may believe, not necessarily accompanied by the grave and general lesions which have been under consideration. Several kinds of irritation, if acting in the right situation, give rise to a similar change in the urine, though often temporary, and for the most part unaccompanied by the serious symptoms which characterise what may be termed "idiopathic" diabetes. Diabetes in its ordinary "idiopathic" form, though sometimes hereditary, and often taking its origin in causes which are not within our knowledge, continually results from circumstances which exert a depressing or otherwise injurious action upon the nervous functions; among them may be mentioned mental disturbances, rage, grief, anxiety, and toil, and the various forms of dissipation, among which sexual excess takes a prominent place. Causes of this nature may readily give rise to modifications of circulation in the nervous centres, and it has been shown that, as far as could be learned from the microscope, a widening or distension of the arteries was the initial change in the pathological series. The foregoing observations concur in leading to the belief that diabetes essentially belongs to the nervous system, a consideration which may have a practical issue in modifying the treatment of the disease.

Dr. Lockhart Clarke bore testimony to the faithfulness with which the appearances had been described. They were precisely similar to those which he had met with in a case of general paralysis, and of which he had given an account in the last number of the *Journal of Mental Science*. As far as he knew, nothing like them had been described before. In his case, which was a typical one of general paralysis, the brain resembled Gruyère cheese, or crumb of bread. The blood-vessels in the brain were surrounded by the so-called perivascular sheaths, and these were contained in large channels in the brain-tissue. The structure of the perivascular sheaths underwent some thickening,

and had then been supposed, by Rokitanski and others, to be an exudation; but they were natural structures. The cavities were not new formations in the brain, but were left by the destruction of the vessels and their sheaths. Dr. Dickinson had not referred to the mental state of his patients. In his (Dr. Lockhart Clarke's) case the cells of the convolutions were much altered, had undergone degeneration, and were loaded with pigment-granules. He had also found in a case of diabetes degeneration of the floor of the fourth ventricle, and erosion of the calamus scriptorius, with destruction of the nuclei of the vagus. It is very remarkable that there were cavities at the roots of the facial nerves, and in his case he had found the same.

After some remarks from Mr. Thomas Smith, Mr. Brooke, Dr. W. Ogle, and Dr. Hare,

Dr. Dickinson replied to the various speakers. He said that in his patients the mental faculties had been weakened, but not otherwise impaired; and that the cells of the convolutions were everywhere natural. The cavities he described were irregular in form, eroded, and contained entangled vessels. In paralysis he believed that changes of the cells were usually found, and that the lesions were chiefly in the pons Varolii and the anterior part of the convolutions. In his cases the lesions were universally distributed, but were most abundant in the medulla oblongata.

Art. 60.—*Cases Illustrating the influence of Opium and some of its Constituent Principles in the Treatment of Diabetes.*

By F. W. Pavy, M.D.

(*Guy's Hospital Reports*, vol. xv.)

Dr. Pavy has revived an old method of treating diabetes, by the administration of opium; but he has done more, for he has endeavoured to find out which of the constituents of that wonderful drug deserves the credit of the cure; and the copious tables of the daily examination of the urine show the great success he has attained. He finds that opium, morphia, and codeine, all possess the power of checking the elimination of sugar in the urine. Of the three, he considers codeine to be the best. Narcotine and narceine were tried in one or two cases, but apparently without benefit. Dr. Pavy begins with half a grain of codeine, and has given it, by gradually increasing doses, to the extent of ten grains three times a day. The following are fair examples of each method of treatment. A man aged fifty, after a month's restricted diet and the use of alkalies, was still passing urine of specific gravity 1038, with 26·64 grains of sugar per ounce, or 1198 grains per diem. After thirty-eight days of opium treatment, there was no sugar, and the specific gravity was only 1025. On leaving off the opium, the specific gravity had risen in seven days to 1048, and the sugar amounted to 1065 grains per diem. On renewing the opium treatment, the sugar was immediately lessened, although he took ordinary diet. He considered himself well, although there was still a little sugar present, and left the hospital. A woman, aged sixty-eight, passed five pints of

urine, of specific gravity 1040, with sugar to the amount of 3275 grains per diem. Under the use of opium, with ordinary diet, in less than three months the urine was reduced to two pints, of specific gravity 1016·20, and was quite free from sugar. She continued well for twelve months, when mental anxiety and overwork appeared to be exciting causes of a fresh attack. She then passed four pints of specific gravity 1036, with 2220 grains of sugar, in the twenty-four hours. Rather less than three months' treatment with codeine completely cured her, the urine amounting to only two pints, of specific gravity 1020, quite free from sugar. She took the ordinary mixed diet of the hospital. The amount of work represented by Dr. Pavy's paper may be roughly estimated when we state that it contains the results of more than 1500 examinations of the urine for percentage of sugar.

Art. 61.—*On the Diagnostic Value of the Corpuscular Blood Elements in the Urine of Bright's Disease.*

By Joseph G. Richardson, M.D.

(*American Journal of the Medical Sciences*, January.)

Dr. Richardson bases his researches on Cohnheim's observations on the process of Pyogenesis, which he says have been tested and corroborated by J. Woodward, of the Surgeon-General's Office at Washington. Cohnheim's view of pyogenesis is that it "consists, first, in a partial interruption of the flow of blood, by which the red corpuscles move more slowly through or almost block up the capillaries, while white globules, adhering to the parietes of the vessels, arrange themselves in a layer upon the inner surface of the walls; and secondly, in the 'wandering out' of the white blood-cells through the stomata, demonstrated by Recklinghausen in the finer bloodvessels, by virtue of that amœboid movement which is one of the most remarkable attributes of the white blood-corpuscles." Pus consists of the white blood-corpuscles which have thus wandered out, and of exuded serum.

Dr. Richardson applies these observations to the elucidation of the pathology of kidney disease and the microscopic appearances presented by the urine. He has been anticipated, however, partly by Professor Axel Key, of Christiania, who, in a paper translated into the *Medical Times and Gazette* of May 22nd, 1869, states that, from his experiments made by setting up inflammation of different grades in the kidneys, and at the same time throwing cinnabar injections into the blood, he finds that even in slight irritation the white blood-cells, without interstitial changes, and without hæmorrhage, escape from the vessels into the renal glomeruli, and force their way into the tubes, sometimes one by one, and sometimes several together, and are found in the urine under the appearance of pus cells, or Professor Key believes the leucocytes may remain on the lining membrane of the tubules and develop into epithelium. He further states: "In morbid changes in the kidneys the cells which have migrated from the glomeruli, and from the interstices into the tubes, and which resemble pus-cells, may occur in great abundance in the urine, both isolated and forming whole cylinders,

without the slightest trace of suppuration or actual pus formation being discoverable in the kidneys."

Dr. Richardson believes that the simplest form of renal inflammation may be produced by some mere mechanical cause, the pressure, for instance, of a small uric acid calculus or a plug of adherent white blood-corpuscles. This produces a partial or complete stasis of blood in the neighbouring vessels, whose first or least amount results in the migration of a few leucocytes and the exudation of the liquor sanguinis, which, mixing with the urine, renders that fluid slightly albuminous; the second or medium degree results in the formation of tube casts, called fibrinous (sometimes on insufficient evidence), and the abundant wandering out of the white (accompanied by a few red) blood cells, through their power of amœboid movement; lastly, when of its third or highest intensity, in the free escape of the red blood-discs, in addition to the other elements alluded to, through the walls of the minute capillaries. He believes that red and white corpuscles occurring in their natural proportions in the urine indicate renal hæmorrhage; when the two kinds of corpuscles are more nearly equal in number they indicate acute or subacute nephritis; and that the existence of white blood-cells (pus-, mucus-, or exudation-corpuscles) without red generally shows a chronic or, at least, less active inflammatory condition of the kidneys. Further, that careful comparative microscopic examinations, performed at intervals of a few days, afford an important guide to the effect of treatment and the progress of the disease.

(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 62.—*The Lectures on Dermatology at the College of Surgeons.*

By Professor ERASMUS WILSON, F.R.S.

(*The Lancet*, February 5, 12, and 19.)

LECTURE I.

Professor Wilson, F.R.S., entered upon his course of lectures on Monday afternoon, Jan. 31, at the College of Surgeons, before a large audience. He commenced by stating that dermatology had its history and its ancestry, and proceeded to show how much it owed to the labours of Æsculapius, Hippocrates, and others, especially in regard to the many terms now used to describe the various cutaneous diseases, and which, probably, in a great number of instances, were those that fell from the lips of the great Father of Medicine himself. These terms or words were coined to express objective and subjective phenomena, such as colour, figure, and quality on the one hand, and evolution, symptoms, cause, and the like on the other; and those which we use in a strictly scientific sense were "the common language of the people" in the earliest times, and are at the present time as eloquent as they were then. The lecturer, in fact, as may be gathered from the preceding remarks, would go back as much as possible to the original meaning in the em-

ployment of terms in cutaneous medicine—a plan which must necessarily produce endless confusion, leading to the abandonment of simple and well-understood designations for the re-introduction of the most obsolete nomenclature. The lecturer lingered a long time on the dictionary in his reference to mere terms, which were displayed in abundance on the diagrams behind him. He next proceeded to speak of the pathological lesions in the two groups of primary and secondary, the former including the tuber, macula, papula, tuberculum, &c.; and the latter, desquamation, induration, incrustation, &c. The papule was ascribed to turgescence of the follicles; the tubercle to the fact that a congeries of follicles were involved in the inflammatory process; the difference being one of bulk between the tubercle, the tuber, and the papule, as well as between the vesicle and the bulla. The causes of cutaneous ailments might be ascribed to defective development, errors of nutrition, malassimilation, irritation, and specific poisons. The treatment of diseases of the skin was stated to be in accordance with the general principles of surgery. There was no internal specific for diseases of the skin; not even was arsenic one, acting as it did as a tonic to the nervous system, and after suitable preparation by other means. It was desirable to improve the general health; and after the acute stage of disease was passed, and had been met by soothing remedies, to stimulate locally the diseased parts by such agents as tar, sulphur, and the like. Mr. Wilson sketched the various classifications of Celsus, Mercurialis, Riolanus, Plenck, Willan, Alibert, and others, mentioning especially what has recently been insisted upon by Dr. Tilbury Fox, that Willan's arrangement and description of diseases are the result of a consideration of the latter, not as regards their initial lesions, but their stages of maturity. It will be gathered from the above that Mr. Wilson touched in a general way only on his subject.

LECTURE II.

On Wednesday, Jan. 26, Professor Wilson delivered his second lecture, the subject being "Eczematous Affections." His reason for dealing first of all with eczema was that this affection was the commonest of all cutaneous ailments, and that being the case, it becomes, as it were, a standard of comparison for other inflammatory affections. Eczema was defined to be a chronic inflammation of the skin, attended with erythema, exudation, and pruritus, being always associated with disordered nutrition of the rete mucosum; and hence followed by desquamation of the cuticle, sometimes effusion into the skin so as to produce vesiculation, discharge, &c. Four words had in past times been applied to it—psora, scabies, eczema, and psoriasis; and these had become sadly misplaced in modern times. In eczema in infants the peculiar diversity of form assumed by eczema is best seen, and is partly due to diversity of structure, according to the varied localities of the body affected. The congestion varies according as the horizontal or follicular plexuses of the skin are involved separately or conjointly; hence uniform or punctated redness. Hyperæmia characterized the first form of eczema—viz., E. erythematodes; but further stages were reached by the recurrence of exudation about the follicles, giving rise to E. papulatum, or E. vesiculosum; by free discharge constituting E. ichorosum, or in the case of

pus production, E. pustulosum; and lastly, by the formation of scales, giving origin to the term E. squamosum. Of all the forms the vesicular is the least frequent; hence, asserted Mr. Wilson, the incompetency of Willan's arrangement to depict the disease. Various subforms were then referred to, together with the modifications induced by the drying of eczema, and the occurrence of cracks, fissures, scales, and the like. The term "psoriasis," in opposition to all other modern dermatologists, is used by Mr. Wilson to signify the scaly stage of chronic eczema with infiltration, and pityriasis to a similar stage, in which there is no thickening, and the scales are very fine and branny. In one form of pityriasis, the so-called P. rubra, to which Mr. Wilson gave a new name, *dermatitis ex obliativa*, there was intense redness, with the free production of large flakes, made up of epithelial elements. The absence of all discharge distinguishes it from eczema. The acarus scabiei was regarded as a cause of eczema; in fact, scabies was looked upon as an eczema produced by the irritation of the itch insect. Speaking of lichen, Mr. Wilson said that Willan's papule of lichen and the papule of eczema were the same, and that indeed two terms, lichen and eczema papulatum, existed for the same thing; but at the same time, the lecturer placed lichen under a separate head, and described the several varieties, referring especially to the characters of lichen planus, and regarding that disease as identical with the lichen ruber of Hebra, on which point, however, there is considerable doubt. In speaking of impetigo, Mr. Wilson spoke to the truth of the assertion that a special form of this affection existed which was often epidemic, attacked several members of the same family, and was characterized by the development of small vesicles, that subsequently blebbed and scabbed over. He had named this impetigo phlyctenodes, which was supposed to be contagious by some; hence the term "impetigo contagiosa," by which it had recently been designated. A general sketch of the treatment of eczematous affections brought the lecture to a close.

LECTURE III.

On Friday, Feb. 4, Professor Wilson delivered his third lecture, and treated of the three diseases, erythema, pemphigus, and dothien (or furunculus). The reader will not fail to notice that dothien is an innovation. The erythematous affections are characterized by a simple pathological redness, superficial, diffused, or circumscribed, apt to change from place to place, to spread, and to be accompanied by a varying degree of pruritus. As contrasted with eczema, erythema had, not a multiple, but a single-lesion hyperæmia; and but rarely such disturbance of the cutaneous surface as to disorder the cuticular formation. It is a pathological hyperæmia. The nerve control of the vessel is lost; but the cell-elements also are implicated, these imbibing a large portion of exuded fluid giving rise in some cases to distinct swelling or tumescent erythema. In erythema, the character of the redness, its superficial nature, and the tendency to œdema, are the important features. In the eczematous family the local phenomena are of primary moment; in erythema the hyperæmia is of secondary consequence, the general state giving rise to it most important. The first sign of disordered health in

eczema are the local changes, the reverse holding good in reference to erythema. The varieties of erythema are:—1. Fixed forms—viz. (*a*) traumatic, as from pressure, friction, heat, cold, and irritants; (*b*) hæmostatic, as from varicose veins, and in cyanosis; (*c*) idiopathic, as in simple erythema from several causes; (*d*) hæmatolytic, as in the various forms of purpura, which, it will be seen, is classed by Mr. Wilson as an erythema. 2. Migratory forms, as in Erythema fugax, circinatum, gyratum, marginatum, iris. 3. Tumescent forms, in which the subcutaneous cellular tissue is involved in the inflammation, as in Erythema tumescens, papulosum, tuberosum, nodosum, ranked by Hebra under the general term E. polymorphicum, or multiforme. A very beautiful model of erythema, from the action of copaiba taken internally for the cure of psoriasis, was exhibited, and the influence of aniline dyes in inducing erythematous eruptions was fully referred to. Erysipelas was classed with erythematous affections, and its usual varieties sketched. Urticaria, or the kindosis of the Greeks, was described as an erythema chiefly remarkable for the intense pruritus with which it is accompanied, and the migratory and capricious character of the redness. The irritability of the skin was shown by the production oftentimes of wheals after the least scratching of the skin, and through the spasms of the muscular tissue of the skin, and probably the vessels. The varieties made were acute, chronic, as usual, and tumescent forms, U. tuberosa and subcutanea, which, as it were, cemented the alliance between erythema and urticaria. An account of pemphigus, or phlyctenous affections, came next, embracing miliaria, pemphigus, and herpes; and, lastly, furuncular, or, "adopting the language of the Father of Medicine," dothienic affections. These latter were made to include ecthyma—the typical pustular disease of the skin, associated with cachexia and other signs of debility; pustula maligna; furunculus; krithe (or hordeolum), and anthrax, of which Delhi, Aleppo, and Scinde boils are regarded as varieties. The core of the furunculus was regarded as a portion of this tissue—circumscribed gangrene. Mr. Wilson fully acknowledged the neurotic relations of herpes, and stated that, in the phlyctened affections as a whole there was depressed innervation, and lowered vitality of the skin.

LECTURE IV.

On Monday, Feb. 7, Professor Wilson delivered his fourth lecture, and dealt in it with (1) inflammations originating from specific poisons —viz., exanthemata, syphilitic affections, or dermato-syphilis, and elephantous affections, or elephantiasis; (2) inflammations from specific constitutional causes, including lepra vulgaris, strumous affections, or dermato-struma, and carcinomatous affections, or epithelioma; and (3) inflammations from traumatic causes, including the results of burns, bites, stings, frost-bite, chilblain, parasites (animal), &c. In speaking of roseola, Mr. Wilson stated that there was one form said to be like measles, which was a variety of the latter of lesser severity than usual. Objection was taken to the term "lepra syphilitica," the squamous syphilide being in no sense a lepra, but a disturbance of the epithelial formation over a syphilodermic deposit, or erythema. Elephantiasis was ascribed, as regards its cause, to the action of a poison

of malarial nature, rather than to peculiarity of diet, or the like. It was regarded as being sometimes contagious. Mr. Wilson expressed his belief that lepra vulgaris was, as regards the skin, the homologue of tuberculosis of the lung. This conclusion seemed to follow from the fact that it occurred in the children of those who were phthisical or cancerous very frequently, and that the children of those actually attacked by the disease often became phthisical. The occurrence of the disease, however, in the skin gave a certain immunity from phthisis in the lung. The disease was the consequence of nutritive debility. The relation of erythematous lupus to strumous affections was insisted upon, and the implication of the sebaceous glands in this disease referred to. The characteristic of the strumous affections was the production of a tissue of low vitality, and therefore doomed to destruction. In carcinoma, or epithelioma rather, the first impulse to change originates in the cells of the rete, or the glands. Mr. Wilson did not in the lecture make any distinction between epithelioma and rodent ulcer. The well-known pedicular disease, or phtheiriasis, was recognised as a separate disease from prurigo. Reference was made at the end of the lecture to neurotic affections, especially prurigo, which was stated to be a pruritus *plus* eruption induced by scratching, and not necessarily dependent upon the presence of pediculi, as has been so freely asserted of late.

LECTURE V.

On Wednesday, February 9, Professor Wilson proceeded to deal with nutritive affections, or aberrations of nutrition, under the two heads of defect of nutrition and hypertrophy, the former including dermatoxerasia, or, as most people term it, xeroderma, and ichthyosis in its somewhat varied forms; the latter tegumentary moles and nævi, molluscum, warts, corns, papillary enlargements, keloid, dermato-sklerosis (or scleriasis), the elephant leg (called by Mr. Wilson spargosis, but by most writers bucnemia), xanthlasma (*i.e.* the vitiligoidea of Addison), the various forms of vascular nævi, &c. The essentially congenital nature of xeroderma was insisted upon by the lecturer, who ascribed the origin of the disease to exhausted nutritive power in the young. The epithelial formation not only of the surface of the skin was disturbed, but also that constituting the lining of the gland, or which forms the sebum, in fact. This leads to the collection, in some cases, of an excessive amount of sebum, which, collected together into little masses, in conjunction with the epithelial cells derived from the surface of the skin, forms plates (fish-skin disease), or horny projections (porcupine disease). Speaking of the elephantiasis arabum, Mr. Wilson said he had seen a cellulitis involving the deeper parts of the subcutaneous cellular tissue, as well as the skin, and in which there were remarkable hardness and solidity produced without the occurrence of any œdema—such as occurs in what is known in some hot climates as the rose, often the precursor of elephant leg or bucnemia. Xanthelasma, or vitiligoidea, was regarded as a deposit of oil in the substance of the cutis, and in the neighbourhood of the follicles, and its relation to disease of the liver was referred to. The term xanthoma was proposed for this disease, when the deposit takes the form of perceptible enlargements, and

especially when involving the cellular tissue, as may sometimes be seen in the arms and hands, and other parts of the body. Keloid was considered to be a simple hypertrophy of the white fibrous tissue of the skin, occurring in scars (traumatic), or springing up of its own accord (idiopathic). To the same category belonged morphœa, characterized by whiteness and denseness, due to the presence of dense fibro-cellular material like bacon in the skin; and seen sometimes in conjunction with a general or banded induration and thickening about the skin, in which the increase of the white fibrous tissue is very distinct, and occurs without contraction, and with a yellow colour (dermato-sklerosis); molluscum areolo-fibrosum, or fibroma; dermatolysis; and verruca, and the papillary excrescences seen about eczematous disease of long standing.

The next and last group of diseases referred to was "aberrations affecting the epithelium," or epidermic affections. Mr. Wilson said there was only one morbid state that could be regarded as a separate state by itself, and that was "the granular degeneration of the epidermis." This was a low form of inflammation, bringing about a peculiar alteration of structure. The granules in the rete mucosum, that usually grew into cells, are arrested in their early stage of growth, and simply proliferate; they subsequently bud and elongate, giving rise to what resembles in appearance a phytiform growth, or a fungus. Some people have gone the length of regarding the new production as vegetable in nature, and had ascribed the change to the implantation upon the surface of a vegetable fungus. Mr. Wilson regarded the whole thing as a granular degeneration of the epidermis. Mr. Wilson merely limited himself to the statement, and did not enter into any arguments in support of his opinion. He observed that ordinary ringworm was contagious, but that pityriasis versicolor was not so under any circumstances, a statement at variance with the experience of other observers.

LECTURE VI.

On Friday, February 11, Professor Wilson concluded his course, which the reader will observe was limited to the enumeration of diseases of the skin, of their proper designations, and the position which they severally occupy in the clinical classification proposed by the lecturer. In the last lecture Mr. Wilson dealt with onychopathic, chromatopathic, trichopathic, steatopathic, and idrotopathic affections, or diseases of the nails, of colour, of the hair, of the sebaceous glands, and of the sweat-glands; the details being in accordance with the arrangement adopted in his published works, with this exception, that gutta-rosea figured under the head of disease of the hair-follicles, instead of eczema as hitherto. Mr. Wilson of course denied the parasitic origin of the disease in the hair of ordinary ringworm, and the fungous nature of the trichophyton or achorium. He referred to a swollen condition of the hair in syphilis, in which the cortical part is reduced to a mere thin external sheath, the remainder of the shaft being occupied by structure which has the characters, broadly speaking, of the medulla. We understood Mr. Wilson to refer the occurrence of brittleness of the hair, in connexion with the rupture of its fibres, in the sites of what

appeared to be little white specks or knots in different parts of the shafts, to the generation of air in the shaft from disorder of the nervous system.

In concluding, Mr. Wilson said he had, as proposed at the outset, reviewed the components of the family of skin diseases, had taken a synoptical or panoramic view of one branch of medical science, and had endeavoured to construct a framework in which each disease had its separate and appropriate place. His task completed, he had one duty left to perform. He would feel he had ill fulfilled it did he fail to convey some expression of gratitude he felt towards the Council of the College of Surgeons for the protection it had extended to dermatology by giving it an asylum within these walls, for setting apart such a magnificent site as the Hunterian Museum for the display of various illustrations of disease, some of which had been before them. The young plant thus planted must thrive and grow strong, so that in times to come British dermatology, fostered by the College of Surgeons, would become one of the ornaments of British medicine.

Art. 63.—*Remarks on Feigned or Hysterical Diseases of the Skin.*

By James Startin, Esq., F.R.C.S., Senior Surgeon to the Hospital for Diseases of the Skin, &c.

(*British Medical Journal*, January 8.)

In Mr. Startin's public and private practice during the last thirty years, wherein perhaps one hundred and fifty thousand instances of skin disease have been recorded, he has met with numerous examples of so-called "hysterical diseases of the skin."

Hysteria has been termed an "essentially imitative disease;" and, although the morbid condition of the system from which it originates is chiefly confined to the softer sex—the result, probably, of reflex action connected with the organs of reproduction—yet there are rare instances of similar feignings in the male, though these, for the most part, are examples of malingering.

The maladies of the skin which, in Mr. Startin's experience, are most frequently simulated, are erythema, eczema, pemphigus, ulcerations, morbid growths or discolorations, the "Dyschromatoderma" of an eminent dermatologist, alopecia, and changes in the cutaneous secretions.

"The first instance which I shall cite is an example of simulated eczema of the eyelids in a married woman between thirty and forty years of age, the wife of a merchant's clerk in Austin Friars, who had been accustomed to move and find employment in stations superior to that now occupied. This patient, who was childless, but had adopted a little girl whom she passed as her own, was troubled with various hysterical ailments, amongst which was the not uncommon one of retention of urine, attended with attacks of cough and sickness—such attacks not being amenable to any treatment by myself and others, beyond the ap-

parent relief following the passing of the catheter. On one occasion, in an interval of my attending her, the patient, after a violent fit of hysterical cough, had ecchymosis of both conjunctivæ and of one eyelid; this she chose to treat by washing with lime-water, of course producing much irritation; and, to relieve the latter, she obtained a lotion from a druggist, which she persisted in using, owing to its asserted cooling qualities (?). The effect of this lotion was to cause an eczematous affection of both eyelids, for which she again sought my advice. The usual appliances were recommended, and internal means, but without avail. The patient stated that the lotion from the druggist was 'all in all.' I therefore called upon the latter, and found that my patient, at her express desire, had been supplied with a hair-wash which contained ammonia and tincture of cantharides; hence the *eczema palpebrarum*. I got little credit from my patient or her friends, by exposing her proceeding; but the hair-wash was discontinued, and a cure accomplished by a lead lotion. I was less successful with the retention of urine, for which she became treated by the late Dr. Conquest. This patient, whilst apparently blinded by the eczema, performed numerous hysterical acts, such as cutting out figures, likenesses, &c., on black paper, in a remarkably clever manner, which, as she pretended she could not see, constituted a true 'exaltation nerveuse.'

"The second case was simulated erythema marginatum in a young woman, aged twenty-one, employed in a draper's shop, in which were several good-looking young men. I found that the erythema, situated in different regions, was occasioned by the skilful use of flour of mustard applied in the wet state by means of a large camel-hair brush, so as to produce the map-like form indicative of this form of erythema. I was indebted for the accidental discovery of this agent to a sister of the patient, who told me, with seeming concern, that nothing appeared to do her sister so much good as a mustard emetic, and that she was obliged to take one twice or thrice a week; but that the eruption was always worse the next day.

"The third case which I will cite is a very curious one, of discoloration of the skin—'dyschromatoderma'—inasmuch as it was well known to most of the eminent physicians in Brighton and London; the young lady residing in Sussex, and being of a family of some social importance. She was under the care of my friend Mr. W. Morris, of Petworth, who has authorized me to mention his name. This case was considered an example of melanosis of the skin, a case of pityriasis nigricans, an instance of congenital syphilis, &c. When the young lady was brought to me by Mr. Morris, I found the skin on the face, the temples, and sundry parts of the front of the body, covered with patches of a dark brown or black secretion, which could not be removed with water or spirit, or such an amount of friction as could be applied to it, owing to the tenderness of the surface, according to the patient's account. In short, a marked state of hyperæmia cutis existed; so that when I took a piece of flannel to rub the part with a mild preparation of soap-suds, the procedure could not be endured. However, the young lady said she could bear the use of a camel-hair brush, which she thought I had dipped in water, though in this instance I was the deceiver, as pure ether was substituted; when I found, not to my surprise but to that of

my patient, that the ether washed off the black pigment, leaving the skin *fair as a lily*—the compound staining the skin being candle-black and grease. My attention was now drawn to the thighs, on which were sundry ecchymosed patches; these I perceived were produced by so many dexterous pinches with the young lady's thumb and index finger. The patient did not resent, as is usually the case, my exposure of the simulation, which was done in as delicate a manner as I could contrive —viz., by saying nothing, but holding a hand-glass before her face, as soon as the parts affected had been cleaned by the ether, which, after a moment of astonishment, caused, on her part, a fit of hysterical laughter, as she professed to think herself cured. My friend Mr. Morris wrote to me some time afterwards to tell me that the 'black girl' had also been cured of her hysteria, and that she continued 'fair as a lily;' at the same time permitting me to use his name in reciting the case, and enclosing (but not of course for publication) a bundle of prescriptions, letters, &c., of the various eminent authorities whom she had consulted.

"The fourth case which I will mention is more striking in its peculiarities than the preceding; it was that of a young lady of good position, living in the centre of the coal and iron-stone district of the midland counties. She brought to me a letter from her medical attendant, who mentioned that the disease was of a most anomalous nature, and that it had baffled all the treatment that had been brought against it, both by himself and numerous others, specialists as well as general practitioners, stating besides, 'that since I have known Miss ——, she has been the subject of hysteria in a variety of ways, at one time assuming the form of a loud barking cough, existing for months; at another, diarrhœa, which nothing could relieve; then, again, hysterical aphonia, which lasted, I think, about six months,' &c. When the young lady presented herself, with her nurse, to my observation, I found an anæmic young woman, about twenty-two years of age, whose face and front of her neck were nearly covered with a thick black incrustation, which was affirmed both by the patient and nurse to be coagulated blood that had oozed from numerous minute points beneath the incrustation, and had congealed into the form and substance which her present appearance presented. Her medical man had also written to me: 'I have carefully removed a portion of this incrustation from the face, it then not being so thick as the last two months, and, with a sponge and warm water, got down to the surface, and distinctly saw *myself* an oozing of blood take place from several small points, and this continued for some hours in spite of applications which were then made to prevent the incrustation forming again; this washing was also practised by Mr. ——, who had been previously consulted.' Such being the statement of the young lady's case, I found that the appearances verified, as far as the eye was concerned, all that had been said about it; yet to the practised observation of any one familiar with cutaneous diseases the sham was at once evident; but how to convince the patient and her attendant, by the removal of the incrustation, that her sham was discovered? This, I confess, appeared to me at first sight no easy matter, as the same tenderness of surface manifested in the former case, was also a conspicuous symptom in this; to gain time, therefore, as the patient was prepared to stay awhile under my observation, I prescribed an acid chalybeate

aperient and a lotion composed of equal parts of glycerine and rose-water, to be kept constantly applied warm, by means of wetted linen, to all affected parts. On my patient's visit the next day, I found that the glycerine lotion had softened, and partially brought off, the incrustations in many places, but that a portion of the crust had evidently been replaced; she moreover said that the lotion did not agree, &c., and that it had been discontinued through the night. I therefore had recourse to another application, which, like glycerine, I have had the pleasure of first introducing to my medical *confrères*, and which, like the former agent, has been admitted into the *British Pharmacopœia;* I allude to flexile or elastic collodion.* With this, by means of a large camel-hair brush, I painted over the whole of the patient's incrustation, so as to exclude the air and prevent evaporation, which the elastic collodion effectually accomplishes, as it dries rapidly upon a moist surface; lest, however, any portion should require a second application, Miss —— was furnished with a second supply of collodion: this precaution proved needless, for the next day I found that although there had been an addition to the incrustation over some parts of the elastic varnish, the mass beneath had become completely softened, owing to the prevention of evaporation from the substance itself, as also to that of the natural perspiration of the cutaneous surface. With very little effort, I therefore removed from the face and neck the entire mass, which together weighed upwards of three quarters of a pound. This mass is still in my possession, and consists not of coagulated blood, as was supposed, but of softened extract of liquorice, minute hairs and cutaneous scales, as I informed myself of by the smell and general appearance, and Mr. T. Taylor, the chemist, by special analysis. Thus ended the case, which, however, was most strenuously denied and resented by the patient and her nurse, whom I afterwards believed to have been her accomplice, and also by her friends, and, I regret to add, by her medical attendant, who, in a letter subsequently written, professed to believe 'that if the liquorice had been put on (?), it had been done not to simulate or deceive, but to "stanch the bleeding."'

"The fifth case to be mentioned is that of a servant girl, who suffered from an obstinate ulcer on the left arm, in the situation in which an issue was generally placed when these emunctories formed therapeutic agents more frequently used than is at present the case. As the ulcer would not heal, I fixed the arm to the side by means of a cushion in the arm-pit, and the ordinary bandage for fractured clavicle. In the short space of less than three weeks the wound healed by simple dressings, and I lost sight of the case.

"In the same establishment—Messrs. Maudsley's, the engineers, where this patient was employed—another instance of simulated disease originated, illustrating what has often been observed, the seeming contagiousness of imitative diseases. This young lady's maid, otherwise in good health, was troubled with a most obstinate inflammation of the eyes, with great intolerance of light, that resisted all means employed

* See papers on Glycerine in the *Medical Times* of 1845, 1846, and 1850; and on Collodion, and its Improvement, "Elastic Collodion," *Medical Times*, 1845, vol. xix.

for its cure. She was sent to me on the credit of her companion's cure. I found some degree of inflammation of the conjunctiva lining the eyelids, produced probably by some agent of the patient's contriving. After a short ineffectual trial of the ordinary remedies, I advised her to seek the services of the Eye Infirmary, where she attended some time until the sham was worn out.

"The sixth case occurred to me a few years ago, and was that of a young hysterical female in the middle ranks of life, who spoiled a large amount of linen in consequence of profuse perspiration of a dark or black colour; this I found to be a solution of soot in milk or tea, which opinion was confirmed by my esteemed friend, Mr. Jonathan Hutchinson, whom I asked to put a portion of the linen under the microscope, who thus wrote in reply:—

"'My dear Sir,—I have examined carefully the portion of stained calico sent me, and can make nothing of it more definite than that the black material is probably some form of charcoal, as soot, coal, or lamp-black; it is non-crystalline, amorphous, quite insoluble in ether, liquor potassæ, or strong hydrochloric acid. If the question as to its nature is an important one, I would not like to give a positive opinion, as my examination has been unavoidably hurried, and has omitted several tests which I should have liked to have tried, had I had time.

"'Believe me, my dear Sir, yours very truly,

"'Jonathan Hutchinson.'

"The seventh case to be mentioned is that of a chlorotic attenuated young girl of seventeen, who for some chest-affection, real or imaginary, had been an out-patient of the Consumption Hospital, where she had been supplied with a blistering liquid, to produce small flying vesications on the chest. Whilst under this treatment, a series of what were termed whitlows appeared in succession on the fingers of both hands, and as soon as one was well another finger became affected, thus producing a case of artificial pompholyx benignus, on which account she was brought to the Blackfriars Skin Hospital. When she presented herself there were four fingers affected, three on the left hand and one on the middle finger of the right. I punctured these bullæ, as is my usual practice, and applied a piece of litmus paper, when the reaction, contrary to what is almost constantly the case, was vividly acid; hence I suspected simulation was employed, which the history of the blistering application, probably acetum lyttæ, before-mentioned, verified. It is probable that, in the first instance, the blistering was accidental; and, from the hysterical *penchant* for creating pity and interest in the girl's surroundings, it was continued until exposed.

"The eighth case was a form of alopecia in a little girl between eleven and twelve years of age, the daughter of highly respectable parents of the Hebrew persuasion. In this young lady the hair in the front of the head would not grow: after using various pomatums, washes, &c., it would sometimes attain half an inch to an inch in length, when it would, as stated, suddenly fall or drop off, leaving little more than an irregular crop of stumps. I at once told the medical man who kindly called me to see the case, that as I knew of no disease having these characteristics, the scalp being quite sound and healthy, I sus-

pected some trick or morbid infatuation, but that I would not give a decided opinion until I had put some of the hairs, or rather the stumps of the hairs which had fallen, or had been cut the night before my visit, under the microscope. The half-inch lens of this instrument revealed the mystery; that the hair had been cut, probably with a penknife or razor, the incisions being too smooth for scissors, was as plainly evident as the marks of a knife on a divided piece of wood. This fact I wrote at the request of my medical friend, that he might show the parents of the child, who, as usual, were in no wise content, as will be seen from the letter which I subjoin, shortly afterwards received by the medical man:—

"'My dear Sir,—You will probably remember visiting with me in —— Square a Miss ——, and kindly writing your opinion of the cause of loss of hair. The parents of the child have since that time taken the opinion of Mr. ——, who says that he frequently meets with similar cases; that the loss of hair is caused by the child having grown too fast. He says most decidedly that the child did not herself cut the hair. I thought it well to let you know Mr. ——'s opinion, which has reflected some discredit both upon yourself and also upon

"'Yours, faithfully,

"'A. W.'

"A ninth case is that of a girl employed in a lacquering establishment, who presented herself with an anomalous ulcerative eruption on one fore-arm: the ulcers appeared in a clustered circular form, chiefly as large or a little larger than a sixpence, and they were deeply concave, though granulating freely from their base. Some of these ulcers had healed, and presented raised cicatrices like those following burns, or resembling 'keloid.' No previous history could be obtained of the case, which had been about a year in duration, beyond the fact that the ailment had been slow in its progress, and as one part healed others appeared, so as to necessitate the girl's discontinuance of her employment, and oblige her to live upon the earnings of a lone widowed mother. On witnessing this eruption, and observing the discontented hysterical aspect of the girl, I felt convinced some caustic agent had been used; and when I remembered that nitric acid was copiously employed by lacquerers, I was convinced that this liquid had served the patient's purpose. After confining the arm with strapping until the sores healed, I extorted a reluctant confession that my surmise was correct. I believe there is, or was, a model of a similar case to the foregoing amongst the preparations of cutaneous disease at Guy's Hospital Museum. I may here mention also that I learned from this case, and another where Mr. Syme used nitric acid to remove moles from the shoulders of a lady of rank, that this caustic might occasionally be employed with advantage to improve the appearance of cicatrices in the neck and elsewhere, when attended with depressions or concavities, as it has the property of giving rise to granulations that partially obliterate such scars.

"The tenth and last case which I shall bring forward is that alluded to at the commencement of this paper—viz., simulated lupoid ulceration of the face. This young lady, a Miss ——, about twenty-seven or twenty-eight years of age, residing in the suburbs, has been my patient,

on and off, for two years, and has baffled all my efforts to obtain a cure. Sometimes after the simplest dressings the sores will heal, and remain sound for a week or two; at other times the more powerful caustics—the acid nitrate of mercury, for example—have been required to induce the healing process. The patient confesses that in most instances she gives rise to those sores by picking the affected parts. She states 'that a small lump is felt beneath the skin, which she must have out, as the itching is quite intolerable.' A sore forms in these places, and leaves a more or less unsightly scar, which it takes some weeks to heal, only to be followed by other picking, ulcers, and unsightly scars, which I have no doubt have been continued and maintained by some expedient the fertile imagination of Miss —— has suggested. This young lady has for years been suffering from hæmorrhoids in an aggravated form; she also is afflicted with profuse leucorrhœa. I have attended to these symptoms as the probable cause of the facial complaint. The acid nitrate of mercury has been freely applied to the piles, and potent chloride of zinc injections for the leucorrhœa; but although both these ailments have been mitigated, if not cured, by these means, yet no change in the facial ulceration can be traced to their disappearance. One extraordinary fact, however, has lately come to my knowledge—viz., that during my prolonged and painful sufferings from stone and its consequences, including lithotrity and lithotomy, Miss ——'s face has continued healed; but since my return to my avocations, the old malady has again manifested itself in as obstinate form as ever—hence I have included the case amongst those cited of feigned or hysterical disease of the skin."

Art. 64.—*Constitutional Treatment of Diseases of the Skin.*

By J. McCall Anderson, M.D., Professor of the Practice of Medicine in Anderson's University, Physician to the Royal Infirmary and to the Dispensary for Skin Diseases, Glasgow.

(*The Lancet*, March 19.)

Purgatives or aperients, Dr. Anderson says, are of service in at least one-fourth of all skin diseases, at the outset at all events; and many can be cured by the exclusive use of them. This is especially true of the eczematous group when seen in the early or acute stage, and when associated with digestive derangement or constipation. In doubtful cases it is safer to inaugurate the treatment with aperients; but it must never be forgotten that were debility is well marked, or where there is a decided tendency to ulceration, great caution is required in the use of purgatives. In the employment and selection of purgatives and aperients we must be guided by general principles.

A very excellent aperient is the well-known sulphate of magnesia and sulphuric acid mixture; to which, if there is a gouty tendency, a little wine of colchicum, or, if anæmia, sulphate of iron, may be added as follows:—Sulphate of magnesia, three ounces; dilute sulphuric acid, an ounce and a half; sulphate of iron, three drachms; simple syrup, six

ounces; syrup of ginger, one ounce; infusion of quassia to twenty-four ounces; a tablespoonful, in a good deal of water, three times a day

Another very useful tonic aperient, especially if the bowels are easily moved, and if there are indications of nervous debility, is the following:—Phosphate of soda, three ounces; dilute phosphoric acid, two ounces; syrup of ginger, six ounces; compound infusion of gentian, eight ounces; distilled water to twenty-four ounces: shake the bottle: a tablespoonful, in a large wineglassful of water, to be taken three times a day.

In each case the dose must be so regulated that the bowels are kept freely open. If purging is induced, it must be diminished; while, if the bowels are not acted upon, a pinch of sulphate of magnesia may be added to each dose in the case of the first prescription, a little phosphate of soda in the second.

In acute cases, one or two full doses of calomel, followed by castor oil or a seidlitz powder, is often beneficial at the outset; but prolonged purgation must in every case be avoided, for although it may remove the eruption for a time, it returns whenever the treatment is stopped, and, by weakening the patient, may indefinitely prolong the disease.

We are told that sulphur is the great blood depurant in the case of diseases of the skin; but Dr. Anderson has as little faith in it when administered internally as when used as a local application. When it does good, it is generally in virtue of its purgative action; while it has this drawback, that it is converted into sulphuretted hydrogen, so that the secretions have a disagreeable odour. It is usually given in electuary with acid tartrate of potash, but it is better to prescribe one of the natural mineral waters containing it; and the fact that some of these do not act as purgatives must not be taken to disprove my assertion with regard to the *modus operandi* of sulphur, for the benefit which accrues may be due to the combination of salts held in solution. Those of Harrogate and Moffat in this country, and of Aix-la-Chapelle, Enghien, Barèges, and Luchon on the Continent, have the greatest reputation in this respect; and while some of these waters may be had from the chemist, it is always more judicious, when it can be effected, to send the patient to the spring itself, for he is thus certain to get the waters fresh and pure, and, away from home and the fatigues and anxieties of business, his body is at the same time invigorated and his mind refreshed.

Diuretics are indicated if the kidneys are torpid, especially in the treatment of the erythematous and eczematous group, and in acute cases. Their diuretic action, however, does not always account for the good result observed: thus alkaline diuretics, such as the bicarbonate of potash, or neutral (which in the system are converted into alkaline) salts, such as the acetate of potash, probably do more good in virtue of their alkaline reaction. And this leads the author to remark that *alkaline medicines* are especially useful in the treatment of skin diseases occurring in rheumatic and gouty subjects, and in persons who are martyrs to acidity, or in whom there is a tendency to the deposit of uric acid and of urates in the urine. The alkaline and neutral preparations which are most used are salts of potash, such as the acetate, bicarbonate, and citrate; but, if a stimulant is required, Dr. Anderson generally prefers the carbonate of ammonia; and it will often be found of advantage to

combine these remedies with arsenic, or, if there is a gouty tendency, with colchicum :—Carbonate of ammonia, one ounce ; solution of arsenic, three drachms ; syrup of ginger, six ounces ; infusion of cascarilla to twenty-four ounces. A tablespoonful in half a tumblerful of water three times a day, after food.

It must never be forgotten that alkalies should be given largely diluted, and also some time before food, for although the administration of a small quantity of an alkali seems to cause an increased flow of gastric juice, a large quantity may neutralize its acidity. The dose should be so regulated as to keep the urine constantly alkaline, as tested with litmus paper ; and the medicine should be steadily continued, unless it disagrees, until some time after the disease has disappeared.

Sedatives and narcotics are indicated under the same circumstances as in the treatment of disease of other organs. Dr. Anderson reminds us—and the remark applies not merely to skin diseases—that sleeplessness is often the result of debility, in which case tonics, especially iron and arsenic, are the best narcotics. Sedatives and narcotics are of no use for the relief of irritation of the skin, except in so far as they may induce sleep ; indeed, if they derange the stomach they are very apt to increase the irritation.

But, as is well known, opium in small doses, frequently repeated, is of value in the treatment of affections of the skin occurring in broken-down subjects, especially in cases of ulceration ; but then they do good in virtue of their stimulating, rather than of their narcotic properties.

In genuine cases of urticaria perstans—that is, nettle-rash—recurring from day to day, and from week to week, when it is independent of local causes, and when no constitutional derangement (disorder of the digestive organs or the like) is present, sedatives are sometimes curative, especially bromide of potassium in full doses.

Lastly, it need only be mentioned that the neuralgia which so frequently accompanies and follows attacks of zona (shingles) is best relieved by the subcutaneous injection of morphia.

Cod-liver oil is indicated in the treatment of strumous diseases of the skin, although it is of more value in preventing fresh outbreaks than in removing existing manifestations.

Cod-liver oil is also indicated in the treatment of skin diseases, although they are not strumous, provided they occur in strumous, half-starved, or broken-down subjects.

In dispensary practice we are often consulted by persons who have long been out of employment, whose diet has been very defective, and whose bodies are infested with lice. The use of cod-liver oil in full doses, without the use of parasiticides, often removes the disease by supplying the place of a nourishing diet.

If cod-liver oil is taken greedily by infants, it is almost certain to do good, although the reverse does not hold.

Dr. Anderson differs from Hebra, who limits the value of this medicine to the treatment of strumous diseases ; and from many others who, on the other hand, laud it in the treatment of an immense number of cases of skin disease.

It is unnecessary, Dr. Anderson adds, to dwell upon the use of *iodine*

and its compounds, as these are indicated in the same class of cases as cod-liver oil. Of course this remark does not apply to the iodide of potassium.

Art. 65.—*On Prurigo.*

By Erasmus Wilson, F.R.S.

(*Medical Times and Gazette*, December 11.)

The following case is related by Mr. Wilson :—

"A respectable widow, aged sixty-eight, was brought to me by her daughter on December 4, 1869, suffering under prurigo. Her medical history is as follows :—She had always been healthy until the month of June in the present year, when she had a short attack of ordinary summer cholera. On her recovery from the cholera, she was troubled with a papular pruritic eruption in the sternal groove of the front of the chest, and, at the same time, with pruritus of the fingers and hands; and the pruritus extended in a short period to the whole surface of the skin. Her skin is naturally sensitive, and she has never been able to wear flannel underclothing.

"At the present time, the skin of the whole body, with the exception of the face and scalp, is inflamed and irritable; it is red, dry, wrinkled, brownish in hue, hot, and harsh to the touch, somewhat infiltrated, roughened by desquamation on the limbs and hands, and covered with black scabs, scratches, and bleeding spots, caused by tearing with the nails. In two situations these appearances are more abundant than elsewhere, possibly from facility of reaching them with the nails—namely, on the scapulæ and buttocks. But, with all this local mischief, there is little disturbance of her general health—scarcely more than a sense of weariness from loss of rest and nervous exhaustion occasioned by the violence of the fits of itching. Her application for relief has reference to the pruritus of the skin, of which she complains bitterly. It comes on by paroxysms, and of these she may have as many as twelve in the course of the day; she considers herself fortunate when she has only two or three. The itching is, in fact, a kind of torture. She says that her body feels at the time of the attack like a 'fire-coal;' that the itching is maddening; and, under the impulse of the fiercest suffering, she tears—the term 'scratches' is not strong enough—she tears her skin with her nails until the blood flows from the excoriations. She observes that formerly the skin rose into whitish knobs whenever she scratched, but that latterly the skin excoriates under the process, and shows a tendency to desquamate, the desquamation extending to the palm of the hands and to the sole of the feet. She is correct in this observation, for the pathological state of the skin is undergoing a transition from the more chronic form of prurigo to the more active state of dermatitis with its accompanying exfoliation.

"The neurotic characters of the affection in this poor woman are so obvious as to be calculated to strike the attention of the most unobservant; nevertheless, she has been subjected to examination, and disgusted with the inquiry, as to the possibility of the dependence of the

irritation on lice. Of course no lice were found; but, nevertheless, she was submitted to the action of a sulphur vapour bath three several times. The sulphur vapour baths very much increased her sufferings; they made the skin tender and stiff, and to them may be attributed the drifting into dermatitis, with which the case is at present complicated. At no time have lice been discovered on her person, nor is there the least ground for any such suspicion. She resides with her daughter, with whom she is constantly in contact, and has free intercourse with her grandchildren; but no lice have ever been detected in any of the family, and there are no symptoms of cutaneous irritation among any of its members. The case is plainly one well recognised by the best dermatologists—namely, prurigo—and is, very clearly, a cutaneous neurosis."

Art. 66.—*The Local Treatment of Eczema Rubrum vel Madidans.*

By John Kent Spender, M.D. Lond., Bath.

(*British Medical Journal*, April 9.)

The two main points which require attention are—(*a*) to apply something which cures as well as soothes; (*b*) never to put over that application any impervious covering.

"*Eczema rubrum* is very common on the skin of the leg and of the ankle, and is often connected with varicose veins. The irritation which it causes may be alleviated by dusting the part with dry astringent powders, and by painting on the pharmacopœial preparations of glycerine; but it is seldom that a cure is effected in either case. Ointments of every kind are hurtful. After many trials of various remedies, I found, some years ago, that the common black wash (lotio hydrargyri of the *Ph. B.*) is a very effective application. I mix it with a tenth or twelfth part of glycerine by measure, and then shake it well. A small quantity of this mixture being poured into a wide shallow vessel (as a saucer), strips of linen rag are soaked in it; and, after being lightly squeezed, are placed evenly and smoothly round the affected part of the limb, a portion of the black oxide of mercury adhering to the linen. Each strip should overlap the one above by nearly a quarter of an inch, so as to present an uniform surface covered by the dressing. A *thin* calico bandage will secure everything in its place, and keep it so. Between the dressing and the bandage there should not, on any account, intervene any impervious covering, such as oiled silk or a sheet of gutta percha. Such may appear to have the immediate advantage of preserving the moisture of the linen; but the disadvantage is decided and obvious—that the secretion of the diseased skin is prevented from evaporating, and it rapidly decomposes. Hence, not only is the eczema not cured, but fresh tracts of skin are liable to inoculation. A large area of the limb may become red, hot, and spongy, thin serum streaming out at every pore; and probably the limb is enlarged by œdema of the subcutaneous structures. Renew the dressings twice a day, and no harm follows their becoming dry, provided that they are completely

saturated with warm water before removal. They are then easily taken off without hurting the patient or damaging the healing skin. Since 1860 I have treated a number of cases by the method now related, and I have been successful in all but three or four. And the defiant behaviour of these few suggested the application of a strong nitrate of silver solution before putting on the linen steeped in black wash; and this plan answered completely."

Art. 67.—*Employment of Phosphorus in Psoriasis.*

Under the care of Professor Hardy, of the Hôpital St. Louis.

(*The Lancet*, February 19.)

Of late several experiments with phosphorus have been made in the various hospitals of Paris. It has been tried in some cases to which it had not until now been applied. Amongst others we may just mention the employment of phosphide of zinc in locomotor ataxy, and phosphorus in psoriasis. This last trial is due to Professor Hardy, the well-known dermatologist. Professor Hardy had previously employed the substance in similar cases, and had renounced its use; but during the last few months he has resumed his researches. There are now five patients in his wards—three female and two male—subjected to this mode of treatment. One of the female patients, aged sixteen, and affected with general psoriasis, has taken every day since December 16th a teaspoonful of the following compound—oil, 150 grammes; phosphorus, 10 centigrammes: and has been rubbed every night with a pomade composed of—hog's lard, 100 grammes; phosphorus, 1 gramme. Under the influence of this treatment the scales have completely disappeared. No unusual symptom has been observed.

The other two females have not taken the substance internally, M. Hardy having limited the experiment to friction with the pomade. The amendment is, however, obvious, though the scales have not yet entirely disappeared. The treatment was commenced in the beginning of January.

With regard to the two men, the entire plan of treatment, internal and external, was instituted about a fortnight ago. They are also doing exceedingly well.

This mode of treatment deserves to be noticed on account of its novelty, and of the extremely favourable results which it has afforded until now. It requires, however, to be more extensively employed before any definite judgment can be formed. It also remains to be seen how it will turn out as compared with the other medicaments which are now generally employed here, such as cade oil, tar pomade, nitric-acid pomade, &c. Another point which requires to be settled is whether psoriasis will return after a successful course of treatment, and, if so, at what interval. This can only be decided by time.

Art. 68.—*On the Treatment of Psoriasis and Chronic Eczema by Hypodermic Injections of Arsenious Acid.*

By M. Lipp.

(*Archiv für Dermatologie und Syphilis*, No. 3, 1869.)

The author of this contribution reports three cases:—

Case 1.—A man, thirty-three years of age, affected with psoriasis since 1865, and in 1866 treated for seven weeks with Fowler's solution, was admitted in October, 1868, with large patches over the whole body, chiefly upon the trunk, the feet and hands alone being untouched. In the course of forty-eight days, this patient was injected with forty-four centigrammes of arsenious acid; fifteen days after the last injection the old patches had disappeared without any trace, save small yellow or brownish spots; four fresh patches, however, were developed on the left thigh, the chest, and the back; these were pale and desquamated but slightly.

Case 2.—C. R., aged twenty years, had suffered from psoriasis since 1866; the affection commenced in the knees and legs, and then invaded nearly the whole surface of the body; in October, 1868, the scalp and forehead were covered by patches. In the course of thirty-eight days, twenty-two and a half centigrammes of arsenious acid were injected; the eruption on the legs, forearms, thighs, arms and the lower part of the trunk, was reduced to spots of a pale brownish-yellow colour, and totally disappeared from the superior part of the trunk, the neck, the ears, and the scalp. About fifteen days after the last injection, several fresh spots arose on the trunk and forearms.

Case 3.—This case was one of squamous eczema extended over the whole body. The patient was thirty-three years of age. When an infant he had had eczema on the legs. In 1863 a severe eruption necessitated a sojourn of ten weeks in a hospital. In 1868 there was a fresh eruption on the right leg; in the winter of the same year this increased very much in consequence of an excess of wine; in February, 1869, the scalp, the neck, and the trunk were covered by patches; at this period there was fever, with evening exacerbations. In the course of forty-two days he was injected with eighteen centigrammes of arsenious acid, and the eczema entirely disappeared.

In three other cases injections were applied, but not alone.

M. Lipp made use of two injections: one containing twenty and the other forty centigrammes of arsenious acid to thirty grammes of distilled water. The quantity of acid injected varied from two and a half milligrammes to two centigrammes daily; this latter dose was employed only once. The injections were made upon the trunk, chiefly in the lower part of the back; they excited a slight burning sensation, which rapidly disappeared, and slight irritation; there was never any formation of abscess, as after injections of corrosive sublimate or calomel.

The first effect of the injections in cases of eczema and psoriasis is an increase of the desquamation; the eruption becomes less distinct both in form and colour at the end of the seventh or tenth day; at a later date the infiltration and proliferation of the epidermis are arrested, and there remains but a slight pigmentation, which disappears in its turn.

The symptoms amend at first in those parts where the eruption

is least severe; amelioration takes place sooner on the neck, the chest, the scalp, and the upper part of the back, than in other places.

The following are the general symptoms produced by the injections :— Elevation of temperature, acceleration of the pulse, diminution of appetite, increase of thirst and diuresis, nervous excitation, cephalalgia, vertigo, cough, slight oppression, redness of the conjunctiva, &c. Some of these symptoms became more marked as the dose of arsenic was larger. They all disappeared (with the exception of the acceleration of the pulse) as soon as the injections had been diminished in the quantity of the dose, or quite suppressed. An increased frequency of the pulse was more constant than elevation of temperature.

In two of the above reported cases there were relapses; the injections therefore acted but as palliatives.

With this method of treatment, M. Lipp states, one is certain of the absorption of the medicinal agent and of the preservation of the digestive organs from its action; the required doses are less powerful, and the duration of the treatment is shorter.

Art. 69.—*Cutaneous Eruption resulting from the Administration of Bromide of Potassium.*

By William Cholmeley, M.D., M.R.C.P.

(*Medical Times and Gazette*, December 11.)

At a meeting of the Clinical Society, held November 26th, Dr. Cholmeley brought before the Society the following case, in which the cutaneous eruption which occasionally results from the administration of bromide of potassium presented unusual characters :—H. C., a pallid, dark-haired Scotch lad, of leuco-phlegmatic temperament, aged thirteen, was admitted into the Great Northern Hospital on August 30, 1869, for epilepsy. The bromide of potassium was given in ten-grain doses three times a day, but without benefit. On September 20 Dr. Cruck-nell, who had charge of the patient during Dr. Cholmeley's absence from town, determined to try the salt in larger doses, and, beginning with fifteen grains, quickly increased it to twenty-five grains three times daily. Marked improvement as to the epilepsy immediately followed, but on September 26 an eruption appeared on the patient's face and legs, and quickly became copious and very painful; at the same time there was general malaise, with pain in the head, and the fits became more frequent. The bromide was then discontinued, and nitrate of silver given. The eruption was described as being "like varicella, but that the vesicles, instead of drying up, became in many places confluent, and the clusters thus formed showed a tendency to enlarge, and exhibited numerous points of suppuration." When Dr. Cholmeley again saw the patient—October 18—he had a band of eruption up each side of the face and across the forehead, while the front and outer side of each leg was covered with it from knee to ankle. On the face it consisted of irregularly circular, elevated, flattened, light-brown crusts, varying in size from a pea to a fourpenny-piece, surrounded by slightly red areolæ, and so adherent that they could not be removed without

causing bleeding. On the legs the eruption was in a more active condition; the skin between and around the spots was vivid red, exquisitely tender, hot, and painful, the pain being of a burning, tingling character. Movement of the legs caused very severe pain; the smallest spots, which were also the most recent, consisted of circular, elevated, conical vesicles filled with a milky-white semi-fluid matter, and seated on a slightly elevated hardened base; the largest spots were from one to two inches long, irregularly oval or oblong, elevated, flattened on the surface, and covered with flaccid moist cuticle, or light-brown crusts, under which the surface presented "numerous milletseed-like yellowish-red prominences." Dr. Cholmeley had never seen a like eruption, but from careful observation was convinced that it was a severe and confluent acne excited by the bromide of potassium. The eruption began by a minute, red, hot, and tender pimple, on the summit of which there very quickly formed a small yellowish-white, tense, conical vesicle, pierced by a hair; if the vesicle was ruptured and gentle pressure applied, a smooth yellowish-white substance was obtained, which proved to be sebaceous matter with the bulbous root of the hair; if the vesicle was let alone, it rapidly enlarged, and then was found to contain pus. The crusts of the older spots were partially dissolved by ether, which on drying left a greasy stain, while the remaining portion of the crust was found to consist of epithelium and damaged pus-cells and blood-corpuscles. When the eruption had after seven weeks nearly died away, the bromide was again given in full doses, and on the sixth day the eruption began again to come out very actively, most on the legs, movement being again very painful. Dr. Cholmeley remarked that while it was well known that acne sometimes appeared during the exhibition of the bromide, it was not with us a very common occurrence. In France it seemed to be much more common, and some French physicians, as Voisin and Falret, expected its occurrence in every case, at least where the patient was epileptic. Voisin had described five forms of eruption as induced by the bromide, and his fifth form closely resembled that in the present, only being much less copious. Voisin had seen six cases of it. But in France the bromide is given in much larger doses than with us, from 7 to 9, 10, and even 11 grammes being given daily, and for long periods. Lastly, as showing the bromide to possess a stimulating power over the cutaneous structures, Dr. Cholmeley had seen an obstinate, long-continued acne disappear entirely while bromide of potassium was being taken for a nervous affection.

Art. 70.—*Pathology of Alopecia Areata.*

By Professor Rindfleisch.

(*British Medical Journal*, March 19.)

Professor Rindfleisch of Bonn contributes a paper on this subject to the *Archiv für Dermatologie und Syphilis*. He starts with the assumption that the Microsporon Audouini has been proved by Pincus and others to be a myth, and that the parasitic nature of the disease has

been inferred from the analogies which its development and clinical characters present to those of truly parasitic dermatoses. He proceeds to show that its characteristic features may be accounted for in a different way. It has long been noted that the margins of the affected patch in alopecia areata are devoid of those broken hairs which are conspicuous in tinea tonsurans; also, that there is a general thinning of the hair over the whole scalp. The former peculiarity is accounted for by the solution of continuity in the case of each individual hair taking place at the junction of the lower and middle thirds of its intrafollicular portion. The latter suggests that the operation of the morbific cause is not confined to the bald patches. A temporary malnutrition of the root of the hairs suffices to explain everything. Each hair, in emerging from its follicle, has to overcome a certain amount of resistance offered by the superficial layers of its sheath. Under normal conditions, the continuous cell-proliferation at the root supplies the needful *vis à tergo*. If this, however, undergo a temporary check, the hair ceases to advance, and the opposed surfaces of hair and sheath become adherent. Just below this point is the atrophied tract of the hair. When any such hair is pulled, therefore, it breaks at the bottom of its follicle, and carries with it a considerable part of its sheath. The causes of the malnutrition are to be sought in some influence brought to bear upon the trophic nerves. Sudden cooling of a perspiring scalp has been known to precede alopecia areata. Treatment based on these considerations has proved successful. A lotion consisting of equal parts of tincture of capsicum and glycerine is applied to the affected area: the former ingredient, with a view to stimulate nutrition and promote the growth of new hairs; the latter, to soften the adhesion between the hair and its sheath, and so to facilitate its extrusion.

Art. 71.—*Elephantiasis Arabum.*

(*Report on Dermatology, in New York Medical Journal*, Jan. 1870.)

Among the more positive practical advances of recent date may be mentioned the fact, now so well established, of the marked influence exerted upon a limb affected by elephantiasis arabum brought about by arresting the circulation through the main artery of the part. Many successful cases have been reported during the last few years. Ligature of the artery has been usually resorted to, but that this is not always necessary, is proved by Vanzetti's case,* where a cure was effected by digital compression alone.

The last summary on the subject is given by Dr. Fisher,† of Hanover, who tabulates the cases which had occurred, twenty-one in number. Out of these, eleven are reported cured, nine entirely, and two very nearly. In two cases there was improvement. In seven no improvement or death was the result; and one, Vanzetti's case, was cured by digital compression. The table proves that this method, although not necessarily successful, is yet an improvement on the treatment previously in use. The idea of curing elephantiasis by inter-

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* *Gazette des Hôpitaux*, 1867. † *Virch. Archiv*, 46, 3, p. 328.

rupting the circulation of a limb originated, it appears, with Dr. Dufour, since, in an article written by him in the *Gazette Hebd.*, 1863, he states that his first attempts in this direction date back thirty years; in other words, he was already experimenting the idea in 1833.

SECT. III.—FORENSIC MEDICINE.

ART. 72.—*On Metallic Poisoning.*

By E. D. MAPOTHER, M.D., Professor of Physiology R.C.S.I., Examiner in Surgery to Queen's University, and Surgeon to St. Vincent's Hospital.

(*Medical Press and Circular,* April 27.)

At a meeting of the Surgical Society of Ireland, held April 1st, Dr. Mapother read a paper on some of the forms of Metallic Poisoning. In the course of his communication he detailed cases illustrative of the toxic effects of lead, mercury, copper, and zinc, among tradesmen. In one instance of lead poisoning, a peculiar stammer, or psellismus, was observed. The marone gum-line discovered by Corrigan was present in the copper cases, one of which was due to the inhalation of Olympian green, a carbonate of copper, in painting Venetian blinds. The zinc was inhaled as oxide in brass foundries, and aguish symptoms were constant. In another case, mercurial symptoms followed the rubbing in of half a drachm of unguentum hydrargyri, for the killing of lice. It should be mentioned, however, that the patient was taking iodide of potassium at the time. Dr. Mapother was of opinion that all these metals entered the blood as *chlorides*, into which they were changed by the gastric juice, and that they spoiled the blood by coagulating the hæmatoglobulin. The loss of red cells explained the pale colour, local palsies, especially of the muscles least used, such as the extensors of the forearm and the abdominal muscles, the impairment of the senses, and the neuralgic pains of those poisoned. The coloured gum was probably due to the reduction of the chloride of the metal caused by the chemical rays of light, for it was never noticed round the molar teeth, which were not exposed to them. Blood restoratives, above all a milk diet, baths, and iodide of potassium, were urged as both curative and preventive agents. The use of a respirator too, lined with cotton-wool and kept on by a piece of wood, which necessitated the closure of the mouth, was advised in some of the trades.

ART. 73.—*Case of Poisoning by Ergot.**

By G. S. OLDRIGHT, M.D.

(*Canadian Medical Journal,* March.)

In the case related by Dr. Oldright, the ergot was given three days after delivery, to control secondary hæmorrhage. The loss by flooding

* Abstract of a Paper read before the Medical Section of the Canadian Institute, Toronto, Feb. 4, 1870.

was very slight. About two hours or more after the administration of the ergot the patient began to feel a tingling in the fingers and feet, cramps in the legs, arms, and chest, dizziness and weakness. The pupils became dilated, and the pulse very small, and, if memory serves, accelerated; at the same time a feeling of coldness was complained of. Stimulants and warmth were applied. In about an hour the symptoms gradually subsided, and all went on well for a few hours, when the same symptoms recurred, but with greater intensity. Stimulants were again administered. Heat was applied to the surface of the body by means of extra bed-clothes, hot bottles, and flannels dipped in hot water. This was continued for two or three hours, and it was not till the end of that time that the slightest diaphoresis, or even a good glow of heat was induced. *Then*, the face and head suddenly became intensely congested, being of a purplish red colour. Pain was felt in the head, and the patient seemed much excited and confused. A brother practitioner was called in, and it being feared that convulsions would occur, cold cloths were applied to the head. This intense engorgement gradually subsided, but the congestion continued for two or three days, as manifested by pain in the head, photophobia, &c. Another symptom which was noticed was a diarrhœa, in which the stools were of a dark grey colour, looked as though meal had been stirred through them, and had a peculiarly sickly, indescribable odour. They were accompanied by griping pains. This condition of the bowels was noticed in another case, occurring a few months after, where ergot had been given. Here also there had been a good deal of weakness, and a continual recurrence of faintness, but this was attributed to loss of blood during labour and before it, the case having been almost one of placenta prævia.

After alluding to two other cases, not so well marked as that given above, however, of which he had been informed by other medical men, Dr. Oldright dwelt briefly upon the *modus operandi* of ergot in these cases. Wood in his *Materia Medica and Dispensatory*, teaches that it is a direct depressant, partially paralysing the heart and the capillaries. Dr. Oldright did not feel prepared to go very deeply into the question, but it seemed to him probable that its primary action is excitant to the special and sympathetic portions of the nervous system, exciting muscular contraction and increased tenacity of musculo-fibrous and fibrous tissues. Hence the spasms which it causes. In this way it could diminish the calibre of the arteries and capillaries, whilst it would impede (and here we must remember how continuous and unremitting is its action on the womb), the action of the heart, keeping it in a condition of continuous partial contraction. This causes starvation of the brain (as well as of other parts), and at once brings on the second stage—faintness, vertigo, &c. &c. This is soon followed by the third stage of reaction and congestion of the brain.

Amongst a number of arguments the following were adduced: It is inconsistent to attribute to the same drug the power of directly exciting muscular action in one organ, and of directly paralysing others. Dr. Wood himself confesses, when speaking of the recommendation ergot has received in paraplegia and paralytic conditions of the bladder, that its "applicability in these cases would scarcely be inferred from anything that is known (according to his theory) of its physiological

effects." This points to a power of inducing muscular action: so also do the cramp in the legs, chest, &c., which he does not explain. Again, paralysis of the capillaries would not, as Dr. Wood asserts, arrest hæmorrhages. He takes it for granted that the capillaries have, *in se*, the power of propelling the blood.

Art. 74.—*A Case of Poisoning by Aconite.*

By Robert Dunn, F.R.C.S.

(*The Lancet*, January 8.)

At a meeting of the Medical Society of London, held December 13, 1869, Mr. R. Dunn related a case of Poisoning by Aconite, death appearing imminent; but, by the vigorous administration of sal volatile, brandy, and chloric ether, a successful termination was effected, the quantity of stimulants taken in the nine hours being ten ounces of sal volatile, six ounces of chloric ether, one pint of brandy, one bottle of champagne, besides strong coffee and beef-tea.

Art. 75.—*Poisoning by Extract of Belladonna.*

By Hibbert Taylor, M.D.

(*British Medical Journal*, November 20, 1869.)

Dr. Hibbert Taylor, of Liverpool, reports a case of poisoning by extract of belladonna, an occurrence extremely rare. A young collier, sixteen years of age, swallowed by mistake about a drachm of the extract given to him to make a lotion for his eyes. The poison, dissolved in half a teacupful of warm water, was taken at a quarter before eleven P.M., immediately after supper. He afterwards took a little water, does not seem to have slept, and about ten minutes before twelve he suddenly became violently agitated, throwing his limbs about and groaning and moaning. He was apparently unconscious, but did not speak nor attempt to do so. These symptoms continued for an hour and a half without intermission, and his relative says that he was obliged to lean upon his limbs to restrain the violence of his movements. He then became comatose, and so continued until his death, which occurred an hour afterwards, at half-past two o'clock A.M.

The state of the pupil was not ascertained. The brother-in-law says the patient never opened his eyes, but was continually winking or keeping his eyelids nearly closed.

He did not vomit, nor attempt to do so; neither did he pass any urine, nor were his bowels moved. He did not speak at all from the commencement of the attack.

He was not seen by any medical man during life, nor was anything attempted for his relief. His friends were under the impression that he was suffering from a fit induced by the medicine which he had taken, as he had told them before taking it that it would make him ill.

The following report of the post-mortem appearances was drawn up

by Mr. John Lea Molyneux, of Upholland, who made the examination eighteen hours after death. The upper portion of the body down to the middle and the upper extremities were greatly discoloured, the vessels of the skin being completely gorged with blood, and decomposition had already commenced. The pupils were greatly dilated, and the rigor mortis was well marked. So far as could be seen, there was no external injury. The lungs were gorged, nearly blackened, in fact. There was a little dark blood in the pleural cavities. The heart was healthy: it was empty, except the right auricle, which contained about six drachms of dark semi-coagulated blood. The liver was in a natural condition. The abdomen was considerably swollen. The stomach seemed very fragile and softened in texture, and was very easily broken. Externally, it displayed several slight discolorations, corresponding to dark patches internally. The contents amounted to about a teacupful, in which Mr. Molyneux could not distinguish anything particular, but he did not make an analysis. All the other abdominal organs appeared to be healthy. On opening the skull, Mr. Molyneux found the scalp and periosteum very much congested. The membranes and the brain itself appeared to be perfectly healthy, and contained very little blood.

There are only two remarks which should be appended to this case. The first has reference to the extreme rarity of the accident. Instances of poisoning from eating the berries of belladonna are common enough, and we are sufficiently well acquainted with the symptoms induced, but Dr. Hibbert Taylor has only been able to find two examples of poisoning from swallowing the extract. These examples are recorded in *Taylor's Medical Jurisprudence*, (p. 359, edit.. 1865). The quantity taken is stated to have been a small teaspoonful. In both of these instances the symptoms appear to have been much less violent than in the case above narrated. One patient recovered in two days, and the other is said to have died on the seventh day of some disease.

The other remark regards the length of time which elapsed between the taking of the poison and the manifestation of the characteristic symptoms. The extract was swallowed at a quarter before eleven o'clock, and the symptoms did not appear until nearly midnight, when they seem to have burst out suddenly, and with extreme violence. May not this delay in the development of the effects of the poison be attributed to the fact, that the patient immediately before taking the belladonna had eaten a hearty supper, and then went calmly to bed—circumstances both apparently unfavourable to the rapid action of the poison?

Art. 76.—*On Essence of Turpentine as an Antidote in Cases of Poisoning by Phosphorus.*

By M. Personne.

(*Journal de Pharmacologie de Bruxelles*, May; *Annali di Chemica*, August; and *Pharmaceutical Journal*, December, 1869.)

M. Personne believes that in the present day phosphorus has almost entirely superseded arsenic as a poison in criminal or accidental homi-

cides. Criminal statistics place phosphorus at the head of the list of the substances employed for purpose of poison. From experiments he had performed, M. Personne hoped to find in the essence of turpentine an antidote to phosphorus on the following grounds:—

1. It had been long known that the essence of turpentine, like other hydro-carbons, takes from phosphorus its property of luminosity in darkness, of emitting vapour, and it may be said of burning at a low temperature.

2. Dr. Letheby has recently made known that in an English lucifer match factory at Stafford the workmen have been preserved from necrosis of the jawbone, produced by the vapour of phosphorus, by carrying near to their breasts a small open vessel containing essence of turpentine, the fumes from which came in contact with the mouth and nasal orifices.

3. Finally and more recently Dr. Audaut has published some observations on a case of attempted suicide by means of chemical matches. The suicide was rendered abortive by essence of turpentine taken by the unhappy subject in the hope of accelerating and rendering death more certain.

Personne's own experiments were fifteen in number, and were made upon dogs of medium size, and as nearly as possible of the same strength. These animals were treated in five series of three. Number 1 was subjected to the action of phosphorus only; to number 2 the essence of turpentine was administered an hour or two after the phosphorus had been given; and to number 3 the administration of the essence followed immediately upon the ingestion of the phosphorus. Thus five dogs took phosphorus only, five received the antidote an hour or two after the poison, and five immediately after. All the animals had fasted since the previous evening.

The administration of the phosphorus and of the essence was made by the aid of an œsophageal tube introduced into the stomach by the mouth. Once only it was given in the form of paste for chemical matches; for the others it was dissolved in oil of sweet almonds, and then made into an emulsion with the yolk of egg. These experiments were commenced on the 13th of January and lasted until the 27th of February. The results were that number 1 of every series, namely, those which were subjected to the action of the phosphorus only, died.

Number 2, to which the antidote had been administered an hour or two after the poison had been taken, experienced the same symptoms as the first; some were very ill, but only one succumbed; the remaining four recovered perfectly, and were kept for fourteen or fifteen days after the experiment.

Of number 3, which had received the antidote immediately after the poison, only one died; the others suffered from a slight indisposition, which manifested itself simply by a disinclination for food, but without losing their natural vivacity. These were kept from ten days to a month without exhibiting any change in their health.

It will be seen, then, that all the animals died which did not take the antidote; and that two only died out of the ten remaining, although to five of these the antidote was not administered until one or two hours after the poison.

The absence of success in the two animals which died may be explained by the fact of the extreme cold which prevailed at the time they were submitted to experiment; the temperature was below freezing point.

The largest dose of phosphorus employed in this series was 0·30 grammes, without increasing the dose of the antidote: thus it may be easily understood that the depressing action of the phosphorus upon the animals, added to the intensity of the cold, would have produced fatal results. Of the mode in which essence of turpentine resists the poisonous action of phosphorus, M. Personne says that it does not certainly act like the ordinary antidotes which usually unite with the poison to form insoluble or inactive combinations. The explanation which appears to be the best, is that phosphorus kills by altering the hæmatosin of the blood, which it deprives of its oxygen rapidly, if its absorption into the blood is rapid, and *vice versâ*. In the first case death is sudden enough, as by a real asphyxia. In the second case it is slower, and fatty degeneration results. The essence of turpentine when absorbed seems to prevent the phosphorus from burning in the blood, in the same way that it prevents its combustion in the air at a low temperature; it takes from it the property of depriving the blood of the oxygen which is indispensable to life, and it can then be eliminated without producing disturbance in the economy.

In one case where the absorption was rapid the blood became black, and M. Personne was so fortunate as to detect the presence of phosphorus with Mitscherlich's apparatus. Rapid death from phosphorus poisoning is due therefore, according to M. Personne, to a true asphyxia. To test the truth of the hypothesis further, he has conducted some other experiments with pyrogallic acid, which, like phosphorus, has the power of absorbing oxygen. Two dogs were treated with the acid, the one receiving two, the other four grammes. In both symptoms of asphyxia were developed, and the other symptoms tallied with what are observed after administration of phosphorus. The animal which received the dose of four grammes died in fifty hours, the other ten hours later. The post-mortem indications were the same as those which are found in cases where phosphorus has proved fatal.

ART. 77.—*Remarks on a Case of Sudden Death in Ovariotomy while the Patient was under the Influence of Chloroform.*

By the late Sir JAMES Y. SIMPSON, Bart., M.D., D.C.L.

(*British Medical Journal*, February 26.)

Sir James Simpson says that his recent case of death from chloroform is the first which has proved fatal in his practice. Death from asphyxia, or from syncope, may occur in some cases. Sir James Simpson says, death from asphyxia can generally be averted by at once arresting the inhalation of the drug whenever the breathing becomes noisy or stertorous. Death from syncope is far less under control, and has apparently been the cause of the majority of the fatal issues mentioned in

the journals. Before the introduction of chloroform, patients sometimes died of syncope on the operating table. He gives many where even slight operations, such as opening abscesses, have been followed by death before the introduction of chloroform. Hence, he argues, that probably the fatal terminations in some cases of chloroform are not *always* to be ascribed to the inhalation of the drug. At the various drug manufactories in Edinburgh, upwards of two million of doses of chloroform are manufactured yearly. Sir James Simpson asks whether there is any other potent drug which could be administered with so few fatal results.

Art. 78.—*On Death by Chloroform.*

By Benjamin W. Richardson, M.D., F.R.S.

(*The Lancet*, February 5.)

Dr. Richardson believes that the proportion of deaths from chloroform will be about one in from1500 to 2000 cases of its administration; and he puts aside as exceptional or accidental, or as being eventually raised to the same rate, the smaller mortality that has taken place in some institutions and in some hands. Admitting that there must be a difference between the patient who is killed by chloroform and the patient who is not killed, he declares that we do not at present know what the difference is. He recognises only one bodily condition as a distinct source of increased risk; and that is, a heart with its right ventricle dilated, and attended by bronchial cough and dilatation of veins. In one such case he declined to administer chloroform; and the patient died during its administration by another. Age, sex, the nature of the disease, the severity of the operation, and the skill of the administrator, he sets aside as having little or no bearing upon the result; and at least as adding nothing to what he calls the necessary average of mortality. He proceeded to speak of the precautions that should be taken; and laid much stress upon the effects of temperature and barometric pressure in determining the quantity of chloroform vapour that would be diffused in the air. He advised that the temperature of an operating room should be raised to 65°; that the preliminary fast of the patient should not exceed three hours in duration; that the last meal should be fluid, or semi-fluid (milk and beef-tea, with an admixture of grated biscuit, was recommended); that a little alcohol should be given shortly before inhalation, purely for the sake of its influence upon the mind; that the recumbent or semi-recumbent posture should be enforced, and that, whichever was selected, the patient should not be moved about during the inhalation; and lastly, that as a rule the administration should be rapid. He referred to the manner in which chloroform is resisted by men of great muscular power, while those of active brain succumb to its influence more readily; and finally, he demonstrated by two experiments the mode of death. In a pigeon fully narcotized, a galvanic current called the muscular system into prompt activity, showing that the anæsthetic left the muscles unaffected, and that its action was upon the nervous centres. In a rabbit that had ceased to breathe, the lungs were

found contracted and pale, while the heart was beating rhythmically; showing that the respiration was the vital function that failed; and also that the expiratory effort continued after inspiration had ceased. In subsequent lectures the subject will be continued, the means of resuscitation pointed out, and the uses of other anæsthetic agents discussed. We gather, from some of Dr. Richardson's observations, that he believes a person apparently dead from chloroform—that is, a person who has ceased to breathe, and who would actually die if either neglected or improperly treated—may be restored to life in almost every case; and that thus his rather large proportion of "necessary mortality" may be converted into a mortality that will be only temporary or apparent.

Art. 79.—*Death from Bichloride of Methylene at Guy's Hospital.*

(*British Medical Journal*, May 7.)

The following are the particulars of this case :—

George Birch, aged forty, a healthy-looking man, was placed on the operating table for the purpose of having an iridectomy performed in each eye. One drachm (measured) of methylene was administered. While being brought under its influence, the patient was very violent, struggling, trying to raise up his head, and kicking with his legs. His struggles were forcibly restrained, and he became very bluish in colour; the struggling ceased, and the methylene was removed before the operation was commenced. The operation on the right eye was completed; then the left eye was operated upon. During the second operation, the patient's appearance was normal; there was no blueness; and when the incision was made, he flinched and showed distinct signs of pain. The eyes were bound up and the patient left on the couch while one of the assistants noted down the nature of the operation. About three minutes had elapsed, when it was noticed that the respiration was shallow and catching. On touching the radial pulse, it could not be felt. The colour was normal; except at the angles of the mouth, which were blue. The patient was immediately turned on his left side. There were a few gasping inspirations, then all ceased, the patient remaining pale. For about ten minutes the galvanic current, and for about an hour artificial respiration (Silvester), were employed, without success.

Post-mortem Examination.—All parts were perfectly healthy, except the heart and lungs. The muscular structure of the heart was quite healthy; there was no undue proportion of fat; the walls were strong; the valves healthy. On the surface of the left ventricle were small spots of ecchymosis, of the size of pins' heads, about twenty in number; there were none on the right ventricle; the left ventricle was empty and contracted; the right contained some fluid blood; the lungs were congested; the blood was fluid and of dark colour.

Art. 80.—*The Process for Detecting Blood in Medico-Legal Cases.*

By A. S. Taylor, M.D., F.R.S.

(*Guy's Hospital Reports*, vol. xv.; and *British Medical Journal*, March 19.)

This is a continuation of a former paper, which was occupied with the detection of blood by the guaiacum-test of Van Deen. In the present volume, A. Taylor does justice (somewhat tardily, we think,) to the great improvement in this process, introduced by Dr. John Day of Geelong, Australia, who uses ozonized or ozonic ether, in combination with the tincture of guaiacum. The rest of the article is by Mr. Sorby, and gives very clear details of the spectroscopic examination of blood-stains. He states that 1-1000th of a grain of blood gives a characteristic spectrum; and that in urine a single drop of blood in a pint can be detected by it! In the case of suspected blood-stains, a few fibres of the fabric are to be soaked in water in a watch-glass, and the solution placed in a cell of barometer-tubing of one-eighth or one-tenth of an inch diameter, and half or three-quarters of an inch long. In recent stains, two absorption-bands in the green are readily seen in the spectrum. The author gives further details of the effects of reagents, for which we must refer to the paper itself. The conclusion is, that the detection of *blood* is easy, but to say from what kind of animal it has come is at present impossible.

Art. 81.—*On Poisoning by Hydrocyanic Acid and the Cyanides.**

By M. Bonjean.

(*Archives Générales de Médecine*, Avril, 1870.)

The following conclusions were derived from experiments made by M. Bonjean upon animals:—

Cadaverie rigidity always commenced about two hours after death, but the temperature was always prolonged beyond this period, and lasted sometimes for as much as eight hours; thus the body remains warm for some time after the establishing of rigidity.

Putrefaction is evidently not retarded in this kind of poisoning.

Medicinal prussic acid exposed during fourteen months in a window, in a flask of white glass closed with a cork, lost a part of its toxic properties; but still, after this lapse of time, maintained some energy. Another specimen of the same acid preserved all its strength after having been kept for one year in a flask secluded both from the open air and light.

Prussic acid and cyanide of potassium disappear completely under the influence of putrefaction; it is impossible to find traces of these poisons even when they have been given to the animals in greater quan-

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* Communicated to the Académie des Sciences.

tities than were necessary to cause death. This result is easily explained by the great tendency of these bodies to become converted into carbonates of ammonia and potash, particularly under the influence of partial fermentation.

It is difficult to make out, in a certain manner, such as justice has the right to demand, even when the analysis has been made shortly after death, the presence of prussic acid or of cyanide of potassium in animals who have taken but just the necessary quantity for causing death.

One cannot refuse to admit that prussic acid may and ought to be sometimes found among the numerous products to which partial fermentation gives rise.

Organic matter distilled with water at a heat of from 100 to 120 degrees centigrade, will sometimes furnish on analysis the characteristic reactions of prussic acid.

Art. 82.—*The Antidote for Haschisch.*

By Professor Polli, of Milan.

(*Medical Press and Circular*, December 22.)

Experience has proved that infusions of coffee, of tea, and of cocoa, always increase the action of haschisch; so that if it is wished to accelerate or to augment its effect it should be taken or administered in an aqueous infusion of one or other of these vegetable substances.

Lemon-juice and vinegar, and consequently, citric, malic, acetic, and tartaric acids, in aqueous solution, more or less diluted, arrest the effects of haschisch in a person who has taken it, and thus are competent to serve as real antidotes.

Art. 83.—*On Strychnine as an Antidote to Chloral.*

By M. Leibreich.

(*Gazette Hebdomadaire*, No. 9, 1870.)

M. Liebreich has communicated to the Academy of Sciences of Paris, through M. Wurtz, a short notice on strychnine as an antidote to hydrate of chloral administered in poisonous doses. He was led to this discovery by observing a case of trismus which, after a duration of eight hours, had been immediately cured by chloral. This fact induced him to produce tetanus in animals by strychnine in order to observe the effect of chloral upon this artificial disease. It was then made out that chloral diminished the effect of the strychnine on the condition that it was given very promptly after the administration of the poisonous alkaloid.

A much more important result was then obtained in another series of experiments made by M. Liebreich, which were intended to demonstrate the effect of strychnine upon animals poisoned by fatal doses of chloral.

It results from close experiments that strychnine when administered after too powerful a dose of hydrate of chloral diminishes and removes

its effects, and this without producing the noxious action peculiar to it. M. Liebreich therefore proposes to make use of injections of nitrate of strychnine as an antidote in accidents produced by a too energetic action of chloral or of chloroform.

SECT. IV.—THERAPEUTICS.

ART. 84.—*On Hydrate of Chloral.**

By M. BOUCHUT.

(*Archives Générales de Médecine*, Décembre, 1870.)

"Hydrate of chloral is a powerful sedative of the motor and sensory nervous system.

"The hydrate of chloral ought not to be given to the adult in a larger dose than five grammes, and with infants one should commence with a dose of one or two grammes. It may be administered by the mouth, or in enemata, which produce the same effects as when the agent is applied by the stomach. It is dangerous, in man, to administer the hydrate of chloral by subcutaneous injections. The arterial tension augments under the influence of the sleep from hydrate of chloral, at the same time that the frequency of the pulse is but slightly increased, and it diminishes after waking.

"Hydrate of chloral is absorbed more rapidly by the rectum than by the stomach.

"The urine passed during the sleep caused by hydrate of chloral is neutral, and does not, when tested with Fehling's solution, reduce salts of copper; but twenty-four hours after the sleep has passed off, it becomes more dense and causes a reduction of copper salts, a fact which might lead one to imagine a transient glycosuria, which, however, does not exist.

"The action of chloral is that of chloroform, but its effects are produced more slowly, and last for a much longer time. With some patients it causes a muscular and moral agitation resembling alcoholic intoxication; but there is nothing disgusting or disagreeable about this. With almost all patients the sleep is rarely accompanied with hyperæsthesia, and, in the great majority of cases, its use is followed by a remarkable and decided anæsthesia. This anæsthesia is in relation to the dose employed. And after doses of from two to five grammes, according to the age, it is complete, and allows the surgeon to apply without causing pain, the actual cautery and Vienna paste, or even to extract teeth.

"In therapeutics, the hydrated chloral is a sedative of the violent pains of gout, and of the acute suffering in nephritic colic or dental caries; in short, it is the chief of anæsthetics that can be administered by the stomach.

"Finally, it is a very prompt and efficacious remedy to employ in cases of intense chorea, when one wishes to remove rapidly an agitation which, by itself, menaces the life of the patient.

* Communicated to the Académie des Sciences.

Art. 85.—*Remarks on the Use of Hydrate of Chloral in Affections of the Nervous System.**

By T. S. Clouston, M.D., Medical Superintendent of the Cumberland and Westmorland Asylum.

(*British Medical Journal*, May 7.)

Dr. Clouston's experience of chloral, from having given it in forty cases of various forms of insanity, may be thus summed up :—

1. It has proved a most safe and certain sleep-producer. It seems certain that by it we can compel sleep in any case.

2. By means of this property, attacks of insanity may probably be warded off in some cases.

3. Its action in abating and soothing excitement is more uncertain than its sleep-producing power, and lasts a shorter time than that of any signally powerful drug; but it is most valuable in certain cases, especially in some recent and curable ones, where formerly we should have been afraid to give opium. It has no directly curative action, but it evidently could be so employed as to tide over short attacks of insanity, and to prevent certain cases from being sent to lunatic asylums.

4. Whether it does good or not, it never does harm. In this respect it is the very king of all narcotics.

5. Its effect on the temperature of the body is variable in different cases, and in the same case at different times; but generally it is to reduce temperature slightly, taking the average of a number of patients. It differs from opium in this respect, which raises the temperature; but the reduction caused by chloral is not nearly as great in maniacal excitement as that caused by alcohol in large doses.

6. It should be given to subdue brain-excitement in doses beginning at twenty or thirty grains, repeated from three to five hours. To produce sleep in great excitement, from forty to sixty grains are required, the latter dose not failing in one per cent. of the cases.

Art. 86.—*On the Use of Hydrate of Chloral per Anum.*

(*Berliner klinische Wochenschrift*, No. 1, 1870.)

Some unfavourable results from the subcutaneous application of large doses of hydrate of chloral, such as the formation of abscesses and necrosis of the skin, which had been observed in the Obstetric Clinique at Berlin, led to trials of the same agent in the form of a small enema with some mucilaginous medium. The results of this method of administration proved to be very satisfactory in a case of eclampsia with nephritis albuminosa in a domestic servant, twenty-six years of age, in the seventh month of her first pregnancy. On November 14, there was œdema of the whole body, especially of the labia and the lower extremi-

* Read at a Meeting of the Cumberland and Westmorland Branch, April 21st.

ties; for the previous twenty-four hours there had been no discharge of urine. On the evening of November 26 there was a sharp fit of eclampsia, which lasted for three minutes: fourteen minutes after there was a second fit which was relieved by chloroform. The patient remained in a state of extreme narcosis until forty-five minutes past nine, when she was aroused and became quite sensible, but had no recollection of the preceding attacks. Five minutes before ten there were renewed spasmodic movements of the muscles of the neck, intense flushing of the face, and convulsive movements of the arms and legs. This third attack, and also a fourth one which commenced at ten minutes past ten, were relieved by the inhalation of chloroform. In the interval between the third and fourth fits the patient was unconscious. On November 17 an enema was administered composed of two grammes of hydrate of chloral to thirty of decoction of marshmallow in a medium of strong mucilage. One hour afterwards another similar injection was also administered. Both were retained. At two in the morning the patient fell into a deep sleep, which lasted almost without interruption until noon. After awaking she remained quiet, without regaining perfect consciousness, for about two hours and then went to sleep again with free respiration. This sleep lasted until the following morning, being only interrupted by much vomiting. At noon she awoke and enjoyed half a plate of soup, and then remained quiet in a state of almost perfect consciousness. There was no return of the fits, and by December 23, when some strong pains brought into the world a dead macerated fœtus, the patient had quite recovered. The lying-in progressed without disturbance. This quieting influence and sleep-producing action was observed in several other cases in which the hydrate of chloral in two-gramme doses mixed with strong and thick mucilage and decoction of marshmallow had been applied by the rectum, especially in sleepless lying-in women, and in patients who had been subjected to operation. Local disturbances were never observed even in cases where a second application had been made after a short interval.

Art. 87.—*On the Dangers from the Administration of Chloral.**

By M. J. V. Laborde.

(*Gazette Hebdomadaire*, No. 47, 1869.)

"1. Chloral when injected, even in a small dose (0 gr. 75 to 1 gr. 50) under the skin of a small animal, causes at first a sharp irritation, then a pretty rapid inflammation, and a more or less extensive purulent infiltration, and finally, gangrenous sloughs.

"2. When introduced in the same doses into the stomach of some animal (a dog or rabbit), chloral gives rise to manifestations which bear witness to very painful phenomena evidently seated in the alimentary canal; post-mortem examination proves, in fact, the existence of injection and of very acute phlogosis in the mucous membrane of the

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* Communicated to the Académie des Sciences.

stomach and intestines. The character and the intensity of these symptoms are in proportion to the doses of chloral employed.

"3. When administered to man in health, in progressive doses of 1·50 and 2 grammes daily, chloral determines, frequently on the second and third days, an exceedingly painful sensation in the epigastrium, acute colic and nausea with profuse perspiration. This investigation was made upon myself, and I thought it advisable not to extend the trial further."

Art. 88.—*Experiments with Chloral.*

By Hasket Derby, M.D.

(*Boston Medical and Surgical Journal*, December 2, 1869.)

Dr. Hasket Derby has made some experiments at the Eye and Ear Infirmary with chloral hydrates, manufactured in Boston. The doses given varied from thirty to seventy-five grains (two to five grammes). Thirty grains produced no sensible effect.

In two cases where forty-five grains had been given, the pulse fell in half an hour from 80 to 70 in one case, from 96 to 84 in the other, drowsiness in either case coming on in a quarter of an hour, followed by natural sleep, which began forty-five minutes after taking the drug. Sleep continued in the first case for two and a half hours without waking, and an hour and a half at intervals afterwards. In the other case, with the same amount, sleep only lasted one and a quarter hours.

In two more cases sixty grains were given, the pulse falling in one from 120 to 90, in the other from 90 to 60 in about half an hour, with increasing drowsiness. In the first case the patient did not go to sleep for two hours, and then only slept one and one-fourth hours. Whereas, the other fell asleep in an hour, sleeping heavily two hours, and at intervals for from two to three hours more.

In another case seventy-five grains were given, the pulse falling from 125 to 100 in half an hour, sleep then coming on and continuing for four hours. It was, however, somewhat interrupted, and the patient was roused and made to answer questions without much difficulty.

In no instance did sleep come on in less than half an hour after taking the drug. Two or three of the patients complained, on waking, of headache, lasting from one to three or four hours; but otherwise they seemed to experience no ill effects. Appetites good.

The results obtained with this American preparation will be seen not to harmonize with those of Liebreich, who claims a much greater hypnotic power, having with from one and a half to three and a half grammes (twenty-five to thirty grains) produced sleep which lasted from five to fifteen hours. He also considers chloral an anæsthetic of some power, though inferior to chloroform and ether. Demarquay, on the other hand, in a recent report to the French Academy of Sciences, states, as the result of a series of experiments on animals and men, that he considers chloral as no anæsthetic at all, as the skin is sensitive,

no matter how great the intensity of the sleep. He finds it, however, the most rapid of hypnotics.

Dr. Derby subsequently gave chloral with more positive results. One patient, who had been suffering great pain from an ulcer of the cornea, was given gr. lx. early in the evening. The pain was relieved in the course of half an hour, but the patient became somewhat delirious, and, being missed from the ward, was found wandering about in the upper stories of the building. On being brought back to his bed he at once went to sleep, passed the night quietly, and continued in a drowsy state all the next day. *He exhibited marked cutaneous anæsthesia*, as did also a female patient who took the same dose. Forty-five grains were given in a case of iritis, attended with severe pain, at 1 A.M. The patient, a woman of sixty, went at once to sleep, and awoke the next morning free from pain, but complaining of headache.

ART. 89.—*On the Chloral Treatment of Eclampsia.*

By the Baron PAUL VON SEYDEWITZ, M.D.

(*The Lancet*, April 2.)

At a meeting of the Obstetrical Society of London, held March 2nd, the Baron Paul von Seydewitz, M.D., read a paper on the Chloral Treatment of Eclampsia. After a brief account of the therapeutical uses of chloral, and of the opinions entertained by various writers as to its properties, the author detailed two cases of eclampsia in which it had been used. The first was that of a woman, thirty-five years of age, who was admitted into the Bürger Hospital, at Bâle, in November, 1869, suffering from endocarditis subsequent to delivery. Some time afterwards violent epileptic fits came on, and recurred with great frequency. A variety of treatment was adopted without success. Eventually chloral was administered, with the effect of at once arresting the fits, which did not recur, and the patient was discharged cured. The second was a boy, twelve years and a half old, a patient in the same hospital, the details of whose case had been furnished by Dr. R. Massini, of Bâle. The boy was the subject of Bright's disease, complicated with mitral insufficiency and uræmia. Violent eclampsia came on, as many as twelve convulsive attacks occurring between 11 P.M. and 9 A.M. Chloroform inhalations were used without avail. In the intervals between the attacks he was perfectly unconscious, and unable to swallow. Chloral was injected hypodermically, with the effect of greatly diminishing the strength and frequency of the fits. After two more injections they entirely ceased.

Mr. Spencer Wells hoped that, when chloral was given, its effects upon the temperature of the body would be noted. He had seen the temperature fall from 104° to 90°, after four doses of twenty grains each, at intervals of two hours. In a case of furious maniacal excitement, which he had seen last week with Dr. Monro, one thirty-grain dose was followed by almost immediate calm, and afterwards by sleep.

Dr. Playfair related the particulars of a case of threatened puerperal mania, in which the chloral had proved of great service. The patient had become maniacal after a previous labour. A week after her present confinement the same symptoms which had preceded her former attack showed themselves,—restlessness and inability to sleep. A thirty-grain dose of chloral at bed-time produced a long, quiet sleep, and the same dose was repeated every night for a week. He had no doubt that the attack had by this means been averted.

Dr. Rogers had used chloral principally as an anodyne and hypnotic. He had successfully prescribed it last evening for a child attacked by painful spasmodic twitchings of the left arm and leg, due, he believed, to irritation of the brain from disease of the right ear. It certainly often caused nausea, and in one case under his treatment the first dose is almost invariably rejected; but, after waiting a few minutes, a repetition is retained with beneficial results.

Art. 90.—*Chloral Hydrate.*

(*The Lancet*, March 19.)

This interesting drug has now been sufficiently tested by a large number of eminent practitioners to enable us to form a tolerably clear idea both of its merits and its defects; and as we perceive that (after the usual fashion in matters medical) there is going to be an epidemic rage for the new remedy, it may be well to call the attention of the public to the principal features of its action which can be said to be fairly made out.

In the first place, the term "anæsthetic" should no longer be applied to chloral, for it has entirely failed to make good its claim to this reputation; even the largest doses do but produce a heavy and prolonged sleep, which is, however, essentially different from true anæsthesia. On the other hand, as a producer of sleep, chloral is, in many respects, unrivalled; for though, like every other remedy, it fails in a considerable number of cases, it does succeed in a very large number; in fact, it is inferior in certainty, as a hypnotic, to opium alone. Moreover, it is very greatly superior to opium, and almost every other drug, in the character of its sleep-producing action; there are no attendant symptoms of cerebral oppression; the sleep, though often prolonged, is light and refreshing, and no unpleasant after-symptoms are experienced. It is important to observe, however, that this description only applies to the use of moderate quantities, and that not only unpleasant but highly dangerous symptoms have been produced by doses which we regret to see are very commonly used. Very careful inquiry leads us to assert that it is both unnecessary and dangerous to give larger doses than twenty to thirty grains, repeated once or twice if necessary, for hypnotic purposes. Doubtless it might happen that 100 consecutive patients might take much larger doses with impunity, but the 101st might present the alarming symptoms described by Dr. Reynolds, in a recent number of the *Practitioner*, as produced by a dose of fifty grains, and these symptoms might easily take a fatal turn.

As a remedy for pain, chloral holds a very varying place in the estimation of medical men, some rating it highly, and others thinking it almost worthless. Perhaps the safest estimate of its power over pain is that it only exerts an indirect influence, by inducing a disposition to sleep, in which the pain is forgotten. Certainly it has entirely failed, in the hands of the present writer, to relieve severe pain of a pure neuralgic type. On the other hand, there is a good deal of evidence that it relieves suffering where the parts are very *tense*, and where mere arterial *throbbing* counts for much in the production of the pain; thus it has been very favourably spoken of for its effects in gout. And this fact, if it be correct, corresponds with certain observations which have been made as to its action on the circulation. Both from sphygmographic experiments on healthy persons and on patients, and also from the details of the nearly fatal case reported by Dr. Reynolds, there is reason to think that chloral exerts a contracting influence upon the arterioles, powerful in proportion to the dose; and it may well be that arterial throbbing is checked by this kind of influence.

On the whole, however, there can be little doubt that the great function of chloral is that of a hypnotic and calmer of general nervous irritability. In delirium tremens it is excellent: and it is probable that with two such weapons for choice as bromide of potassium and chloral we shall be able almost entirely to dispense with the use of opium, which is so uncertain and dangerous a remedy in that disease. In the state of sleeplessness which threatens the access of puerperal mania, chloral is probably an unequalled remedy. In melancholia its action as a hypnotic appears to be powerfully and remarkably sure. In mania, also, it acts well enough as a hypnotic, though there seems some division of opinion as to whether it does permanent good. We may also state that in the irritable condition of aged persons who find it difficult to sleep for any length of time continuously, the use of a single dose of thirty grains of chloral appears often to answer excellently well. The minor uses of the drug in relieving more trivial conditions of nervous irritation, and in alleviating painful spasmodic symptoms of various kinds, are probably considerable.

Art. 91.—*Therapeutic Note on Chloral.*

By the late Sir James Y. Simpson, Bart., M.D., D.C.L.

(*Medical Times and Gazette*, January 1.)

In sufficient doses Sir James Simpson has found chloral, as a general law, as sure a producer of sleep and soother of pain as opium or any of its preparations. It is usually swifter in the induction of its narcotism, more tranquil in its action, and more prolonged in its effects than opiates are when taken as hypnotics; but above all it seems in a great measure free from some of the minor drawbacks and disagreeable accompaniments produced by a full and large dose of opium. In this respect it appears to Sir James to fulfil successfully the indications which he predicted some time ago, of being a narcotic as powerful, and indeed more powerful, than opium, "and yet without either its direct constipating

effects, or its indirect tendency to excite subsequent nausea, vomiting, &c." The sleep induced by a full dose of it steals on without any premonitory symptoms. It is usually deeper, and yet more quiet and calm, than that produced by opium ; and it does not leave subsequently the thirst, dry throat and tongue, disturbance of stomach and appetite, and languor of mind as well as body, which most persons unaccustomed to the use of opium commonly feel after a deep and narcotic dose of that drug.

Ever and anon cases are well known to occur in practice in which patients declare their inability to take opium in any form without suffering severely from nausea, faintness, restlessness, and other evil effects. In several such cases the author has now used chloral as a hypnotic with perfect success.

Sometimes chloral produces its hypnotic effects when opium, from its long-continued use, has ceased to do so.

Sir James was not aware of any special contraindications to the employment of chloral when used for somniferous purposes. Even in head and chest affections, where he should have been chary of having recourse to opium as a hypnotic, he has employed chloral with perfect success. The contraindications to opium offered by a tendency to constipation, etc., do not exist against chloral.

Like all other remedies in the Pharmacopœia, it will, no doubt, occasionally fail to produce its desired effect; but as seldom so, perhaps, as most of them. In a few instances the sleep induced by it has been dreamy and hysterical, particularly when the patient was not kept in a state of perfect quietude ; but these are rare exceptions to the general rule.

Sir James has seen enough to convince him that it will prove a very valuable anodyne in some cases of neuralgia, hysteralgia, dysmenorrhœa, pleurodynia, &c., and in the pains attendant upon cancer and acute local inflammations. In some cases of irritable bladder and chronic cystitis he has found it give the patient much longer and more perfect rest than large doses of opium. In several instances it has seemed to him, when given in small and repeated doses, to soothe down both acute and chronic cough with remarkable effect, and to relieve asthma. In a young lady whom the author saw in consultation with Dr. Taylor, suffering under a severe attack of congestive bronchitis with some hæmoptysis, orthopnœa, a small dose (twenty grains) of chloral was given at night. "She speedily fell asleep," wrote Dr. Taylor the next day, "and slept soundly until 4 A.M., when she sat forward in bed and coughed, but appeared to be only half awake. When I called in the morning at 10.30. she was still enjoying a most placid slumber. As I contrast", Dr. Taylor adds, "the distressed and audible breathing of last night with the tranquil sleep and improved state of the patient today, I cannot help concluding that chloral has a directly sedative effect on the whole respiratory surfaces."

Occasionally Sir James has exhibited chloral in continuous small doses for one, two, or more weeks in succession, and apparently with most marked benefit, particularly in cases of chorea, threatened or incipient insanity, &c. A patient from Illinois, who, for several years, has always regularly suffered excruciating spasmodic pain in the left

iliac region, attended with some discharge, for eight days before menstruation began (she has disease of the fundus uteri and left Fallopian tube), has, during the last two periods, kept at bay this old and formidable suffering by taking chloral night and morning during the threatenings of it. She strongly assures the author that formerly she used very large doses of opium and other anodynes without any such favourable effect. Sir James has found the parturient uterus to go on contracting regularly and strongly when the patient was so deeply asleep under chloral as to be only very imperfectly wakened up with the expulsive efforts of labour.

It has been employed in continued fevers to induce sleep and quietude and reduce the pulse. Dr. Liebreich speaks of its utility in rheumatism, convulsive coughs, tetanus, acute mania, and delirium tremens, and as a sedative after surgical operations.

The dose of chloral to an adult for a hypnotic which Sir James has usually employed has varied from 50 to 60 grains; but 25 to 30 grains suffice in some patients. In a case of long-standing sleeplessness, and which had resisted great doses of opium, Indian hemp, &c., 120 grains failed to produce any effect. When used for anodyne and other medicinal purposes, a continuation of smaller doses—as 10 or 20 grains several times a day—is sufficient.

In administering chloral Sir James has given it only by the mouth and by enema; almost always as a draught. It is somewhat acrid and pungent to most palates, and hence requires to be diluted well with water, and to have added to it a large quantity of syrup.

When it first came into use in this country the charge for a dose containing 1 drachm or 60 grains of chloral was as high as 3*s*.6*d*.—an almost prohibitory price. A draught containing the same quantity is now sold by druggists at Edinburgh for sixpence; and doubtless it will become much cheaper when it becomes more employed.

Art. 92.—*On Chloral and its Therapeutical Uses.*

(*Bulletin Général de Thérapeutique*, Nov. 30; and *British and Foreign Medico-Chir. Review*, April.)

The *Bulletin Général de Thérapeutique* expresses its opinion of the value of chloral as a medicine, and summarises the opinions already given as to its efficacy. The substance in question was discovered in 1832 by Liebig, was afterwards studied by Dumas, and has been lately more particularly examined by Liebreich in its physiological relations. Liebreich sets out with the principle that chloral is to be considered as *trichloric aldehyde*, which may be dissolved in an alkaline medium, and is then decomposed to form chloroform. The anonymous writer in the *Bulletin* makes use of the *hydrate of chloral* as the most convenient preparation, and he has found, in his experiments on the lower animals, that its effects are quite analogous to those of chloroform. In the human subject, he tried it first in the form of subcutaneous injection, and both he and Liebreich found that the effects were constant, and were accompanied by no inconvenience. Various other practitioners

have made experiments with this substance, but the results are somewhat contradictory; and M. Bouchut has proved that the different opinions held by the experimenters are due to the fact that impure chloral has sometimes been used. With hydrate of chloral, the results are rapid, evident, and well marked, and these are, the most tranquil somnolence, and insensibility almost absolute. Chloral ought never to be employed in the liquid form, but as a solid hydrate which may be afterwards dissolved in some suitable vehicle. The test of its purity is that it slightly colours a solution of potash with a clear yellow, and disengages a well marked smell of chloroform; if it strikes a brown colour it is impure, especially if the chloroform vapours are mixed with those of chloro-acetic acid. The dose of chloral, given internally, is 2 to 3 or 4 grammes (a gramme is about 15 grains) for a child, and 4, 5, or 6 grammes for an adult, but this dose must not be exceeded. When a patient has been awoke from its effects, the chloral may be repeated so as to induce sleep again, in order that the state of somnolence may be prolonged, if necessary, in painful complaints, as neuralgia, cancer, and burns. A patient may thus take several times 3 to 5 grammes in twenty-four hours, producing each time a period of three to four hours' sleep, but never more than 3 to 5 grammes should be given at a time. The writer in the *Bulletin* thinks that chloral will occupy a distinguished place in medical practice, as a hypnotic in painful diseases, and as an anæsthetic in a number of small but painful operations in which chloroform is unnecessary. Such diseases as nephritic colic and chorea are adapted for the use of chloral, and the extraction of teeth is rendered painless by its use. It is also useful in tetanus, in extensive burns, and in the paroxysms of gout, and it might be available as an anæsthetic in pregnancy. The conclusions drawn as to the therapeutical applications of chloral are the following. Hydrate of chloral is a powerful sedative of the nervous system, both motor and sensitive, but it must be employed pure. The dose should never exceed 5 or 6 grammes at once in an adult, and the preparations should be used fresh, as they are liable to be altered by keeping. The best mode of administration is by the mouth or by injection, but the use of chloral is contra-indicated in cases of organic disease of the brain and the heart. The effects of chloral are due to the production of chloroform in the system by the chemical action of the alkalies of the blood. It is dangerous, in man, to administer chloral in subcutaneous injections. The hydrate of chloral seldom acts as an emetic, and never purges. The temperature is a little lowered by non-poisonous doses of hydrate of chloral, so that it is an algide medicine, and the perspiration is diminished. The hydrate of chloral may be given in definite doses which are calculated to produce anæsthesia, which is not the case with the vapours of chloroform. The action of chloral is exactly that of chloroform, although it takes a longer time in producing its effects, but they are more lasting. In some patients the effects resemble those of alcoholic intoxication, but without the disagreeable accompaniments of the latter condition. In almost all persons there is sleep, and the anæsthesia is proportional to the dose employed. Chloral, unlike opium, does not cause vomiting, and does not constipate, but it promotes the appetite, and when the patient is awoke, there is neither heaviness nor somnolence. It acts

as a sedative in nervous pain, as in the instances above alluded to, and from its action as a sedative in muscular action it is the most prompt and efficacious remedy in intense chorea.

Art. 93.—*The Mode of Preparing Chloral and its Hydrate.*

(*The Lancet*, May 21.)

We extract the following account from the "Traité de Chimie" of M. Dumas, t. v. p. 599 :—"This compound, the name of which is derived from the first syllables of the words Chlorine and Alcohol, appears in the form of a clear, transparent liquid, oily to the touch, and staining paper like an oily body, though the stains disappear in a short time. Its density is 1·502. It boils at 94° C., and distils without alteration. The density of its vapour is 5·0. Its odour is penetrating, provoking a flow of tears; its flavour slightly oily. In the anhydrous state it is very caustic, especially when the skin is exposed to the boiling vapour. It readily dissolves in water, which takes up a large quantity without leaving any residue. When a few drops are allowed to fall into water, they settle at once to the bottom of the vessel in the form of an oleaginous liquid; but on slight elevation of the temperature, they immediately dissolve. The solution of chloral in water has no perceptible taste, but its characteristic smell is perceived if it be warmed. The liquid does not possess an acid reaction. No precipitate of chloride of silver is produced on the addition of the nitrate. If, instead of warming it with water, it be merely placed in contact with a few drops, it combines with it at once on agitation, with the evolution of heat. A few moments afterwards the compound assumes the form of a white, crystalline mass. If a few drops of chloral be placed in a flask containing moist air, the walls of the vessel become covered with delicate, stellate crystals, decussating in all directions, and composed of hydrate of chloral. When the chloral is not perfectly pure, containing a little water, it becomes cloudy after some days, and deposits from its watery solution a white body which may be called insoluble chloral. Chloral dissolves iodine, bromine, sulphur, and phosphorus, especially when heated; iodine communicating to it a beautiful purple tint. The anhydrous metallic oxides have no action upon it. When the vapour is made to pass over warm and anhydrous lime, or baryta, it renders them incandescent; and, transmitted over iron or copper, it converts them into metallic chlorides, whilst they become coated with a layer of brilliant porous carbon. The *hydrated* alkaline oxides readily decompose chloral, leading to the formation of chloroform, formiate of the base, and a little chlorine proceeding from the decomposition of the chloroform. Nitric acid, even when heated, has no action on chloral. The best mode of preparing it in a pure state is to subject absolute alcohol to the action of dry chlorine. Great precautions are requisite, since, in order to act upon about half a pint of alcohol, 1200 litres of chlorine are required, and 1500 litres of disengaged hydrochloric acid have to be disposed of. The chlorine, pure and dry, is transmitted through the alcohol contained in a large flask, from which an escape

pipe leads to a large chimney. At first all the chlorine is converted into hydrochloric acid; but as the action becomes less energetic, the alcohol assumes a yellow colour, which, however, disappears on the introduction of a few fragments of charcoal. The temperature of the alcohol must then be steadily and continuously raised, whilst the current of chlorine is rapidly passed through the fluid, till almost its boiling point is reached. In twelve hours about six ounces of alcohol can be converted into chloral; but when larger quantities are required, the operations must be continued for two or three days. The liquor in the flask is mixed with two or three times its volume of concentrated sulphuric acid, and submitted to careful distillation, in order to free it from hydrochloric acid, sulphuric ether, and alcohol. As soon as the temperature rises, the chloral accumulates at the surface of the mixture, and rapidly volatilises. The distilled chloral is then placed in a retort with a thermometer, and boiled till its boiling point, at first lower, rises to 94° or 95° C. The remaining liquor should be redistilled with sulphuric acid, and again boiled. Lastly, it is to be distilled in a bath of common salt, after the addition of a small quantity of lime. To obtain the hydrate, it is only requisite to mingle it with its own volume of water, and evaporate."

Art. 94.—*On the Alkaloids of Veratrum Viride and their Therapeutical Effects.*

By Horatio Wood, Jun., M.D., of Philadelphia.

(*American Journal of the Medical Sciences,* January, 1870.)

Mr. Bullock, of Philadelphia, has described two alkaloids in the *Veratrum viride*, one soluble, and the other insoluble, in ether; and Dr. Wood has investigated the physiological action of these two alkaloids, as well as that of the resin associated with them. His experiments were made upon some of the lower animals with the alkaloids in question, to which it is proposed, in the forthcoming edition of the *United States' Dispensatory* to give the names *viridia* and *veratroidia*. The general results at which Dr. Wood has arrived are that there exist considerable differences in the action of viridia and veratroidia, the former being only slightly, if at all, locally irritant, never producing vomiting or purging, exerting no direct influence on the brain, but acting as a depressant of the spinal cord and of the circulation, while the latter (veratroidia) is somewhat irritant when locally applied, and is an irritant emetic, and sometimes a cathartic. But, like viridia, it exerts no direct influence on the brain, and is a depressant of the spinal cord and of the circulation. Veratroidia appears to hold, physiologically, as well as chemically, a middle position between viridia and veratria. The resin of the veratrum viride appears to have no very active properties. Dr. Wood thinks that viridia will prove to be a valuable remedy, possessing all the sedative influence of the veratrum viride without the nausea and vomiting which the plant itself often produces.

Dr. Wood has taken viridia himself in order to test its properties, and he thinks that this alkaloid might be given in the dose of one-sixth of a grain repeated every hour.

Art. 95.—*On the Effects of Arsenic in Phthisis.*

By Dr. Isnard, of Marseilles.

(*Bulletin Général de Thérapeutique*, Dec. 30, 1869; and *British and Foreign Medico-Chir. Review*, April.)

The effects of arsenic in the treatment of phthisis have already been investigated by Dr. Cersoy, of Langres, and Dr. Isnard has lately contributed some of his experience on this subject in memoirs published in recent years. Dr. Isnard now gives a summary of his views in reference to the local and general action of the drug. He states, in the first place, that when arsenic is employed in phthisis, the febrile disturbance, when it exists, is weakened and suspended, while the nocturnal sweats, the general excitement, and the sleeplessness are also diminished. As the fever abates the digestive function is improved, and the diarrhœa, or constipation, or vomiting disappears; in short, a general improvement becomes perceptible. As the constitution improves, the local lesions and the lung itself undergo a beneficial change, and the cavities in the lung are cicatrized. This result is proved, according to Dr. Isnard, by the relief of the cough, the diminution of the secretion of the bronchial tubes and of the pyogenic membrane of the cavities, by the substitution of mucous for purulent sputa, and of dry for humid rhonchi. Another and no less important result of the arsenical treatment is the retardation of the evolution of tubercles which are not yet softened, and the arrest of development of those which were about to form. Many tubercles are thus rendered abortive, or they remain in a latent condition, or they do not pass beyond their period of crudity. Dr. Isnard then examines more particularly the immediate action of arsenical preparations upon the respiratory function, the respiratory organs, and the tubercles. Arsenic promotes respiration, as is proved by its physiological and therapeutical effects, and Dr. Isnard states that arsenic eaters, and those who take arsenic for other diseases besides those of the lungs, are relieved of the dyspnœa caused by various pulmonary diseases. The drug also acts beneficially on the pulmonary tissues and the nerves and muscles of respiration; but Dr. Isnard's views on this point are somewhat hypothetical, as are also those which relate to the action of arsenic on the tubercle itself. He considers that the arsenic, by its regenerative action on our tissues and functions, is well adapted to remedy the organic disturbance which engenders phthisis, and that it impresses on the economy a vitality which is superior to, and incompatible with, the development of tubercle, and thus renders the soil unfit for its reproduction. The general conclusion drawn by Dr. Isnard as to the action of arsenic in phthisis is, that by its local and general action, at once curative and preventive, it influences at once the capillary system and the different tissues, affecting both the

lungs and the whole economy. It does not attack the tubercle directly and specifically like a parasiticide, but directs its action to the elements and tissues which remain actually or relatively healthy.

Art. 96.—*On the Treatment of Asthma by Tobacco.* By Dr. Sée.

(*Bulletin Général de Thérapeutique*, Nov. 15, 1869.)

The effects of tobacco are primarily those of a poison, but they differ from those of other poisons in being modified by habit. In this respect tobacco agrees with opium, belladonna, haschish, and arsenic, although all of those are tolerated less than tobacco, while, on the other hand, some medicines accumulate in the system, such as digitalis and strychnia. Dr. Sée considers that tobacco, used in moderation, accelerates the respiration in the first instance, but in larger doses that it causes tetaniform convulsions of the respiratory muscles, and he therefore advises asthmatic patients to use tobacco cautiously, for when too much is employed the very symptoms are produced which the sufferer wishes to avoid. His opinion is that tobacco, like belladonna, acts upon the origin of the pneumogastric nerve without affecting the nerve itself: and that its first action, used in a moderate dose, is to accelerate the breathing, while its secondary action, and in an increased dose, is to retard it. Thus, he continues, tobacco and belladonna act upon the same central organ as asthma does, and he argues, moreover, that this action is inversely to that of asthma, so that the association of the two medicines in moderate doses at the commencement of the asthmatic paroxysm is legitimate and useful. In giving advice, therefore, as to the use of tobacco by asthmatic patients, he says that they should be recommended to consume only a certain dose, for if tolerance be exceeded, then the circulation and the respiration will be retarded, the vessels will be dilated, and all these unfavourable effects will promote the return of the paroxysms.

Art. 97.—*On Cincho-Quinine, a new preparation from Peruvian Bark.*

(*Boston Journal of Chemistry*, 1869.)

It is proposed to employ in medicine a preparation containing all the alkaloids of the cinchona barks, instead of the barks themselves, or any one of the alkaloids separately. Cincho-quinine contains quinia, cinchonia, quinidia, cinchonidia, and other alkaloidal principles which have not been directly isolated, and the precise nature of which is not well understood. In the paper referred to, cincho-quinine is said to be preferable to sulphate of quinine, inasmuch as it does not produce cerebral distress as the latter sometimes does, and it does not oppress the stomach or create nausea. It has also the great advantage of

being nearly tasteless, the bitter being very slight, and it is less costly than the sulphate of quinine. It forms a perfectly clear solution in water acidulated with acetic or sulphuric acid, and a pleasant elixir may be made from this solution by adding syrup and aromatics. In intermittents, cincho-quinine may be given in the same doses as sulphate of quinine, but it is recommended that a dose of ipecacuan or other emetic should be given as an introduction to the treatment of fever and ague. This mode of treatment is said to be very successfully carried out in the wards of the United States Marine Hospital, Chelsea.

Art. 98.—*Therapeutical Use of Arsenic in Phthisis.*

Under the care of Dr. Nonat, at the Hôpital la Charité, Paris.

(*The Lancet*, March 26.)

On a recent visit to the Charité, Dr. Nonat kindly communicated to us his experience of the therapeutical effects of arsenic in phthisis. The very favourable results which Dr. Moutard-Martin, of Beaujon Hospital, had derived from arsenic in the treatment of tuberculosis had led M. Nonat to try the substance in a large number of cases. He has administered the remedy under the form of arsenious acid, and in doses of one milligramme, in pills, to begin with. This dose was gradually increased every eight days by one milligramme, till he would reach the dose of four milligrammes a day. In these conditions the medicament has afforded him good results, in cases where tuberculosis had attained only the first or second stage, and presented no intestinal complication, for when vomiting and diarrhœa have set in, arsenic must be at once discarded. When phthisis is incipient, and when it is well circumscribed, M. Nonat has seen arsenic increase the appetite and strength of the patients. They gain flesh, look much better, and feel stronger and more cheerful. In such cases the medicament does not increase the pulmonary congestion, and, indeed, is attended by no inconvenience. The only counter-indication lies in the alimentary canal. In many subjects, however, placed in the above conditions, arsenic, if it did no harm, failed to produce any benefit.

M. Nonat's rule for the employment of arsenic is, therefore, to administer it only in cases of well-circumscribed phthisis. When tuberculisation is generalised, or far advanced, arsenic, far from producing any good, increases the irritation of the bowels, and brings on gastro-intestinal disorder: the local action of the substance becomes noxious.

Summing up the practical results of his experience of arsenic, M. Nonat says that good effects, in hospital, have been the exception in patients in whom the disease has attained an advanced stage; but in civil or town practice, where the physician is consulted at an earlier period, the results have been good in a large number of cases. In a word, M. Nonat believes that arsenic is a remedy which must not be neglected in the incipient stage of phthisis, or when the disease is well circumscribed; but he adds that its virtue has been too highly extolled.

Art. 99.—*On the Employment of Veratrin in Subcutaneous Injections.*

By Dr. Pégaitaz.

(*Deutsches Archiv für klinische Medicin*, Band vi., 1869. *Gazette Hebdomadaire*, No. 11, 1870.)

Veratrin has been the object of numerous researches; isolated by Meissner and almost at the same time by Pelletier and Caventou, then studied chemically by Couerbe and afterwards by M. Wurtz, it has been experimented upon by physiologists and physicians, the bare enumeration of whose names would prove that over the whole of Europe attention has been directed to the physiological and therapeutical action of this agent.

The work of Dr. Kocher directed in 1866 attention to the effects of veratrin in the treatment of fibrinous pneumonia. M. Oulmont also published a memoir on veratrum viride in 1868. (*Gazette Hebdomadaire*, 1868, pp. 38 and 58.)

The experiments of M. Oulmont led him to the conclusion that veratrin was not the active principle of veratrum viride. The principal argument invoked by this observer consisted in the fact that veratrin was a modifying agent of muscular contractility, whilst veratrum viride and veratrum album produced no phenomena on the side of the muscular system.

The results obtained by Dr. Pégaitaz differ from the preceding results in many respects. This author has studied the physiological and therapeutical action of veratrum employed internally and administered by subcutaneous injection. On the first point he reproduces the general data laid down by Aran, Biermer, and Kocher, and endeavours to show that the mode of action of veratrum viride does not sensibly differ from that of veratrin.

The majority of the researches made on veratrin present a remarkable conformity. They all show the hyposthenic action of veratrin upon the pulse and temperature and its anti-febrile properties. The symptoms observed in the alimentary canal are the first and most constant phenomena of poisoning.

Dr. Pégaitaz had especially in view the comparison of the action of veratrin according to the mode of administration. With this end, he studied at first the effects of veratrin when injected subcutaneously on dogs and on a cat; the symptoms were analogous in all the experiments and in relation to the quantity of veratrin injected.

The first symptom of all was salivation, which came on in from three to five minutes after the injections, then followed movements of the jaws, "le mâchotement" as Aran was the first to call it. He then observed in progression, nausea, vomiting and diarrhœa; then exaltation of reflex action, and diminution of sensibility; at the same time the temperature was lowered (in some cases by three degrees); frequency of the respirations and the cardiac pulsations was also much pronounced. Finally convulsions and tetanus were the last signs of poisoning, which, in the dead body, could not be recognised by any appearance of inflammation.

The therapeutical effects of veratrin injected subcutaneously were followed by Dr. Pégaitaz in several cases of pneumonia and in a case of pleurisy.

Immediately after the injection the patients complained of an acute pain at the seat of injection, which pain lasted from two to five hours. Sweating was not absent in any one case; it was independent of the temperature. Vomiting was a common symptom, it was occasionally repeated several times, and was accompanied by epigastric pain and also hiccough. The sensation of dryness and burning in the pharynx was frequent, also salivation. Diarrhœa was observed in ten instances, but was not very intense and ceased spontaneously. In one case, however, the diarrhœa was accompanied by sharp colic.

There was collapse in one case, somnolence generally, but no delirium.

The anti-febrile properties of veratrin were shown in all the injections.

In two cases the temperature and the pulse were restored to the normal standard. In one case this effect was produced with the temperature at the end of ten hours; with the pulse, about six hours after the injection: in the second case, at the end of nine hours with the temperature, at the end of three hours with the pulse. In both cases the temperature remained normal for three hours and was then raised again, but to a less extent than before the injection. In the other cases the effects were less precise, and there was sometimes observed, on the contrary, a slight elevation of the temperature and a slight increase in the frequency of the pulse.

Dr. Pégaitaz also studied with care the peculiarities presented by the circulation. Modifications of the cardiac activity were constant under the influence of veratrin. In most instances at the time when the pulsations diminished in frequency, the fulness became more feeble. With diminution of the tension coincided contraction of the arterial calibre and diminution of the height of the pulsation. These signs of the action of veratrin upon the circulation were the first to be observed, and supplied a measure for the ulterior employment of doses of veratrin; they did not indicate the commencement of absorption but that a sufficient quantity of this agent for the production of the preceding phenomena had been absorbed. Not only was the fulness of the cardiac contractions modified, but the rhythm was also varied. When the tension was lowered to a certain degree, the pulse became irregular and intermittent, and when the apex of the heart was explored by palpation a lengthening was often observed during the systolic contraction of the organ.

Respiration was but slightly influenced by the injection of veratrin; it was not restored to its normal type.

Such were the common signs; it will be remarked that among the differences presented between the action of veratrin on patients suffering from pneumonia and its action upon animals, it is necessary to insist particularly on the one hand upon the slight importance of the intestinal disturbances and the absence of collapse, and, on the other hand, on the influence of veratrin with regard to the mechanism of the circulation. These points are interesting, and it will be seen that they differ from the facts pointed out by M. Oulmont.

It seems according to the results obtained by Dr. Pégaitaz, that veratrin in its mode of action on febrile patients approaches nearer to poisons of the heart than to poisons which modify muscular contractility.

After having shown the effects of veratrin administered internally or by subcutaneous injections, Dr. Pégaitaz has compared together the results furnished by the two modes of administration, and taking account at the same time of the local disturbances and the general symptoms, has arrived at the following conclusions: Veratrin employed in subcutaneous injections in cases of fever acts more rapidly and more calmly than when it is given by the mouth. The symptoms are the same in both instances. The pain which accompanies the injections generally contra-indicates the hypodermic method.

Art. 100.—*Danger of Injections of Perchloride of Iron in Sanguineous Tumours.*

(*New Orleans Journal of Medicine*, October, 1869; and *New York Medical Journal*, April, 1870.)

A child ten weeks old, having three sanguineous tumours respectively on left cheek, left leg, and right lumbar region, was brought to Prof. Sautesson, of Stockholm. While in the country, the child had been for two weeks in charge of a physician, who was prevented from vaccinating the tumour on the face by want of virus, and instead applied collodion, but this produced no change.

The tumours were beneath the skin and evidently still growing. That on the face, the one of greatest importance, was an inch in diameter, and occupied more than half the thickness of the cheek, being situated midway on a line drawn from the ala-nasi to the lobule of the ear. Vaccination not promising any hope of success, and such procedures as excision, ligation, and cauterization presenting serious objections, the choice was limited to acupuncture by galvanic needle, and injection of a coagulating liquid. The latter was preferred by the professor, and immediately, with the assistance of Professor Abelin and Dr. Schlerg, the injection of a liquid, composed of ferri perchloridi six parts and alcohol one part, was commenced. The injection was made with a subcutaneous glass syringe containing eight or ten drops of the mixture. The capillary tube was first introduced and directed vertically across the tumour, towards its centre, and only one-half of its contents injected, it was then withdrawn, and reintroduced horizontally, the point being directed deeper in the tumour. Before the second injection was completed, the operator was forced to withdraw the syringe on account of the appearance of threatening symptoms in the child. Death took place in about two hours.

Autopsy, on the day following death, revealed the following symptoms: The tumour was much lessened in size; its tissue, from being spongy, had become firm and solid from coagulation of the blood.

The surrounding veins (facial and its ramifications) were empty. The external and internal jugulars contained no clots in the superior portion,

but as they approached the chest the contained blood was generally clotted. The clots became more and more firm in the subclavian, the superior vena cava, and in the right cavities of the heart. These were literally distended with coagulated blood. The left auricle contained a small clot, the left ventricle was empty. It is probable that, in introducing the tube the second time, one of the veins (perhaps a branch of the facial) was penetrated. The history of this case and its unfortunate termination suggest, as a precautionary measure against a similar occurrence, pressure between the tumour and the heart when performing the injection.

Art. 101.—*The Therapeutical Value of the Sulphites.*

By J. W. Miller, M.D.

(*Edinburgh Medical Journal*, Sept. 1869.)

After recording a series of cases of typhus, eight hundred and eighty-four in number, and which were treated part with and part without the sulphites, showing no benefit whatever from their use, Dr. Miller adds:

"Having seen the inutility of the sulphites in the treatment of typhus fever, I have not made any trial of them in the treatment of the other exanthemata. There remains, however, a class of diseases in which, I believe, they have been proved to possess great value—I mean, cases of purulent infection, or septicæmia. In midwifery practice, for instance, such cases are common enough. We have cases of abortion, in which the ovum is imperfectly expelled, and in which portions of the placenta are left adherent to the uterus, which shortly become putrid. In such cases the most serious consequences frequently ensue from the absorption into the blood of the putrescent material. In cases of adherent placenta likewise, at the full term, the same peril is present. Under such circumstances we possess, I believe, in the sulphites a very effectual means of reducing the danger to a minimum. I have had several such opportunities in practice of testing the power of the sulphites, and with the most satisfactory results. One very marked case occurred to me within the last few weeks. After a very protracted and difficult case of labour, in which the child was hydrocephalic. the head requiring to be opened before delivery was effected, the placenta was found to be adherent. It required to be scraped from the uterus over its whole extent by the fingers, and doubtless numerous small fragments were unavoidably left here and there adherent, as was partly proved by the occurrence, a few days later, of considerable hæmorrhage, which was arrested by means of ergot. The woman lost much blood before the extraction of the placenta, was much exhausted by the long labour, and the uterus contracted very imperfectly. The discharges soon became putrid, and the patient was just in the condition to favour the absorption of the putrescent fluids by the uterine vessels. I put her at once under treatment by half-drachm doses of the sulphite of magnesia every fourth hour. For a few days she was in a high fever, but nevertheless she made a rapid and complete recovery, and was able to walk out of doors within three weeks after her delivery. Several other similar cases have occurred to me, to give the details of which, however, would be of

little use. They were either cases of delivery at the full time, in which, from retention in the uterus of coagula of blood, or of fragments of the placenta, the lochia became putrid; or cases of abortion, in which the placenta came away piecemeal, and in which, under the employment of the sulphite of magnesia, the constitutional symptoms were either slight or entirely absent. To be of any avail, I believe the remedy must be given in considerable doses, from half a drachm to a drachm every fourth or sixth hour, and, still more, that its use must be commenced early in the case, either before or immediately on the appearance of the constitutional symptoms. In one case of abortion in which the sulphite was not given until after the development of symptoms of blood-poisoning, it had not the slightest effect in mitigating the course of the disease, and the case ended fatally."

Art. 102.—*Contribution to the Therapeutics of Laryngeal Diphtheria.*

By Dr. J. Albu, Director of the Lazarus Hospital, Berlin.

(*Berliner klinische Wochenschrift*, Feb. 1, 1869; and *St. Louis Medical and Surgical Journal*, July 10, 1869.)

Laryngeal diphtheria being almost inaccessible to local treatment, inhalations and even tracheotomy being mostly unsuccessful, the latter in young children not even allowable, I have, in order to exert a dissolving influence on the diphtheritic membranes of the larynx, made injections into the latter of lukewarm lime-water. To this end I entered the canula of the injecting syringe from without, usually between the cartilaginous rings of the trachea, and at first threw only a few drops, but afterward, seeing that there was no danger in doing so, a whole syringeful, upward into the cavity of the trachea toward the larynx. This was never followed by suffocating paroxysms. Violent cough is induced and the children usually at once eject shreds of diphtheritic exudation. Thus far I have treated six cases in this manner, though only one successfully. The first five children so treated, all under five years of age, were already in the stage of suffocation, and lived in consequence of the injection, as I am convinced, several hours longer than could have been expected. A girl of ten affected with decided laryngeal diphtheria, in whom tracheotomy was indicated, I have saved by the injection twice a day of a syringeful of lime-water, with the appropriate internal treatment. (*Aqua Chlori, Decoct. Cinchonæ.*)

We add to the above the following note by the editor of the *Wochenschrift*, Dr. Waldenburg, which is appended to Dr. Albu's report:

"In the treatment of diphtheria and croup, lime-water has hitherto proved in my hands also the best local remedy, and I employ it partly in the shape of gargles, partly for injections into the nose, and chiefly for inhalation in the atomized form by means of the steam apparatus. Children over three or four years old usually submit to these inhalations willingly. In cases in which this method is not applicable, I could not hitherto make up my mind to have recourse to the method recommended by Gottstein, of injections of aqua calcis *per orem* directly into the larynx, fearing suffocation. The method recommended above, by Albu, seems

to show that the fear of suffocation in consequence of bringing liquids into the larynx is not quite well founded. But whether, having resolved upon this, the injection from without has any advantage over the injection *per orem*, seems *a priori* doubtful; Albu's present communication at least cannot yet solve the doubt. When the children are old and docile enough for the use of inhalations of lime-water, this method is decidedly preferable to every other local treatment."

Art. 103.—*The Glycerine of Tannin.*

By Meredith Clymer, M.D.

(*Medical Record*, Dec. 25.)

An incorrect formula for the glycerine of tannin is given in the *Medical Record*, November 1st, p. 396. It is officinal in the British Pharmacopœia of 1867, and the directions for its preparation are: "Take of tannic acid, one ounce; of glycerine, four fluid ounces. Rub them together in a mortar, then transfer the mixture to a porcelain dish, and apply a gentle heat, until ample solution is effected."

Dr. Sidney Ringer first published his remarks on the employment of this preparation in *The Practitioner*, July, 1868. He says: "It appears to be but little known, and consequently but little used, while, in my opinion, it proves of great service in many diseases;" and he mentions ozœna; the reddish, sanious, or purulent discharging excoriations in the inside of the nose after scarlet fever or measles, with the consequent eczema of the upper lip; the thick, lumpy, greenish-black, often offensive, discharges from the nose, generally chronic and intractable; the thin sanious or purulent discharges from the ears, in weak unhealthy children, particularly during convalescence from long illness; the early stages of eczema, when the skin is red, tumid, and weeping; the eczema which is limited to behind the ears of children; inflammations of the throat, after the acute symptoms have subsided, and particularly in those cases where there is general relaxation of the uvula and pharynx. In his *Handbook of Therapeutics*, just published, Dr. Ringer adds to the list of affections in which this combination does good.

Having used glycerine of tannin since the appearance of Dr. Ringer's paper, in most of the disorders just mentioned, I can bear witness to its efficiency. I have also found, that in chafing (intertrigo), both in adults and children, it gives prompter relief than any other means. It will remove almost immediately the annoying itching of pruritus ani. Stuffing of the nose in syphilitic children, so characteristic and troublesome, and hindering sucking, is for a while relieved by it. In vaginal leucorrhœa it is of much and immediate service. The canal should be loosely packed with wads of cotton wool, thoroughly moistened with it. Excoriations of the os tincæ, particularly where there is a boggy os, with a greenish-yellow or sometimes sanious discharge, may be dressed with glycerine of tannin. After cleansing the parts, a cotton wad well saturated with the preparation is to be placed completely round the os and vaginal cervix, and another wad, moistened with glycerine, over this; the dressing to be changed every twenty-four hours. In chronic

gonorrhœa and gleet, injections of glycerine of tannin, diluted from one-half to two-thirds, will often prove quickly curative; it should remain in the urethra for five minutes.

Dr. Ringer writes: "In phthisis a frequent hacking cough is often dependent on the state of the throat, and can be allayed by this application. A good night's rest may be obtained by applying the paint just before going to sleep. A small quantity of morphia added to the glycerine of tannin still further increases its soothing, sedative power on the throat. The paroxysms of simple, uncomplicated whooping-cough may be most considerably lessened in frequency and violence by well sponging out the pharynx: it should be carried low down, and be brought well in contact with the epiglottis and the neighbouring parts. . . .May be painted on the mucous membrane of the mouth in ulcerative stomatitis." (*A Handbook of Therapeutics*, p. 221.) In throat affections, I have not found it so efficient as other astringents, and by no means agreeable to the patient, though Dr. R. says, "It has the further advantage of not possessing a bad taste."

ART. 104.—*On the Production of Rapid Anæsthesia, and on a New Anæsthetic Compound for that Purpose—Methylic Ether.**

By BENJAMIN W. RICHARDSON, M.D., F.R.S.

(*Medical Times and Gazette*, April 9.)

Dr. Richardson commenced by explaining that within the past two or three years a practice had been followed of producing a quick insensibility which should be succeeded by equally quick recovery. Two agents had been employed for this purpose—(*a*) nitrous oxide gas, (*b*) bichloride of methylene. Accepting that the principle of producing quick insensibility had a practical intention and usefulness, Dr. Richardson said that he had objections to the methods which up to the present time were adopted for carrying the principle into practice. His objections to nitrous oxide gas were as firm as ever. He held still that the employment of an agent which excluded all atmospheric air during inhalation, which produced the most perfect asphyxia, which required for its administration costly and troublesome apparatus, and which, if administered beyond a given period, even for some seconds, must of necessity kill, was a bad agent for anæsthesia. The administration was, in fact, a rude and vulgar process, retrogressive in science. Respecting bichloride of methylene, though it was very hard to speak a word against any application of a remedy which he, the author, had himself introduced, he must be candid and say that he was not favourably impressed with the application of bichloride for *quick* general anæsthesia. That it was marvellously rapid in its action was true, that it answered the end had in view was true, and that it had now been used for the *rapid* inhalation an immense number of times without a casualty was also true. But

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* Abstract of a Paper read at a Meeting of the Medical Society of London, March 14.

these facts could not conceal the further and all-important fact that the bichloride of methylene belongs to a dangerous family of chemical substances, and cannot therefore be played with without risk. It had been extolled as safer than chloroform, and that was allowed, for as it contained an equivalent of chlorine less than chloroform it was naturally safer; but the safety was relative, not absolute. Under these impressions, the author was led recently to review experimentally the action of the whole of the more promising anæsthetic fluids and vapours, including chloride of methyl, chloroform, amylene, hydride of amyl, bichloride of methylene, ethylic ether, methylic ether, and some others which were given on a table placed before the Society. The result was that he had decided in favour of methylic ether for rapid anæsthesia. The anæsthetic properties of methylic ether were first discovered by Dr. Richardson in 1867, and the substance has been reported upon by him in two reports to the British Association for the Advancement of Science. On May 20, 1868, he inhaled it for the first time himself, Dr. Sedgwick and Mr. Peter Marshall administering it to him to complete insensibility. He was narcotised completely in one minute, was unconscious for seventy seconds, and recovered almost instantaneously without nausea, headache, or other unpleasant symptom. From that time the author had been in the habit of narcotising occasionally with methylic ether, and recently he has used it systematically with marked success. The ether is made by digesting one part of pure methylic alcohol with two of strong sulphuric acid. The mixture is heated, and the methylic ether which passes over as a gas, is subjected to frequent washings in strong potassa solution. The ether remains as a gas even below zero; it has an ethereal odour; it is, chemically, an oxide of the radical methyl. Its vapour density is 23, taking hydrogen as unity, and it burns in air. The strongest objection to methylic ether is, that it is a gas; but happily the difficulty is to a large extent overcome, the gas being very soluble in various substances. Water takes up thirty-seven volumes of the gas, yielding an ethereal fluid of pleasant taste. Pure ethylic ether and alcohol take up over a hundred volumes. For practical purposes the author prefers absolute ethylic ether of sp. gr. 720, and boiling point of 92° Fahr. as the solvent. The ether is charged with the gas at a temperature of 32° Fahr., and the compound is at once bottled and firmly corked down. It should be kept for a time before being used, the process of keeping producing a comparatively stable compound. In using this compound, which he proposes to call methyl-ethylic ether, the author at present employs the simple mouthpiece invented by Mr. Rendle, and made merely of leather. He is adding to this a reserve bag, in order to conserve the ether. From one to two drachms may be put into the inhaler for quick narcotisation. Dr. Richardson next described cases in which the methyl-ethylic ether has been administered to the human subject for extraction of teeth. In eleven cases the whole operation, from commencement of the inhalation to the complete recovery, was under three minutes, in several cases one minute was sufficient, while in two cases forty-five seconds sufficed. In no case was there spasm, syncope, or asphyxia during inhalation, nor any after-nausea, and in all cases there was a semi-consciousness, so that the patients did what they were bid to,

remembered often what had been said, and yet were not conscious of pain. The author next described the action on the nervous centres of methyl-ethylic ether, comparing it with chloroform and other anæsthetics containing chlorine. He showed that the ether produced no such excitation of the nervous centres which supply the vascular system as chloroform does, and that consequently there was absence of muscular spasm, or contraction of blood-vessels, and of syncope from fatal contraction of the heart. When it was carried to the extent of arresting life in the inferior animals, it produced death by paralysing the organic nervous centres. This extreme result was preceded by convulsive action similar to that which is seen in death from hæmorrhage, the convulsion being due to the absence of arterialised blood in the muscles. So well, however, did the heart still retain its power, that in one case, in a lower warm-blooded animal—a guinea pig—the respiration returned *spontaneously* in pure air four minutes and forty-five seconds after it had ceased from inhalation of the ether. No fact could more definitely speak in favour of the safety of this agent. In conclusion, the author said that, as he had confined himself this time to rapid anæsthesia for short operations, his remarks must be taken as bearing on that subject only. He had introduced *methylic* ether as the readiest and best agent he at present knew of for the purpose described. It was better than nitrous oxide gas, because it allowed air to be given with it, and did not asphyxiate. It was better than bichloride of methylene, because it did not produce muscular spasm and syncope. At the same time, he did not consider it as perfect, nor should he consider general anæsthesia perfected until he or some other observer should discover an agent that will destroy sensibility without interfering at all with organic muscular life, volitional power, or consciousness. Methylic either approached towards this perfection, though it did not touch it, and it encouraged perseverance in experimental research. For these reasons it was worthy the attention of the Society.

Art. 105.—*The Administration of Anæsthetics.*

By A. Ernest Sanson, M.D. Lond., M.R.C.P., Physician to the Royal Hospital for Diseases of the Chest, and to the North-Eastern Hospital for Children.

(*Medical Times and Gazette*, April 23.)

Practical rules.—Selection of cases having been made according to the principles before mentioned, Dr. Sanson suggests the following as rules for guidance :—

1. The administrator intrusted with the induction of anæsthesia should be provided with the following armamentarium :—A case of three stoppered bottles, one containing the mixture of chloroform and absolute alcohol, another pure chloroform, a third absolute ether. A soft handkerchief or porous material through the fibres of which, when covering the face, respiration can readily take place. A hypodermic syringe with suitable morphia solution.

2. The patient should have abstained from food as far as possible on

the day of inhalation. Nothing whatever should have been taken for four hours.

3. The patient being, if possible, in the recumbent position, the administrator should place the handkerchief over the nose and mouth, so as loosely to cover them with a single fold, and note that respiration is unimpeded. The mixture of chloroform and alcohol should then be dropped on the fold, a few minims at first, and, after two or three inspirations, twenty or thirty, which should be renewed as often as evaporation renders necessary. This should be continued until the desired stage of anæsthesia has been arrived at.

4. Ether may now be substituted if it is thought desirable, the fold of lint being moistened therewith.

5. In some rare cases it may be necessary (but only after tolerance has been induced by the administration of the dilution) to use some of the pure chloroform.

6. In case of any alarming symptom artificial respiration should be immediately practised.

Art. 106.—*Protoxide of Nitrogen as an Anæsthetic.*

By M. Jeannel.

(*The Lancet*, Dec. 18, 1869.)

M. Jeannel, the distinguished Professor of Pharmacy and Materia Medica of Bordeaux, has just brought forward a valuable memoir on the subject of protoxide of nitrogen. The following are the author's conclusions which more particularly relate to the anæsthetic properties of the gas :—

1. The purified gas, such as is employed at present, does not produce those exhilarating effects which have been described by authors of the commencement of this century.

2. Anæsthesia produced by protoxide of nitrogen is not so complete as that brought on by chloroform; but it differs essentially therefrom by the rapidity of invasion, the absence of excitement at the outset, and the facility with which one returns to the normal condition. It produces also a more decided kind of asphyxia.

3. It is of convenient application to operations of a short duration; and it is probable that the agent may be applied to the more important surgical operations, by preserving a suitable interval between the inhalations.

4. We are justified in saying that protoxide of nitrogen exposes less than chloroform to a fatal accident, but it certainly does exert such an action; it therefore should be exclusively kept in reserve for operations where peril is increased by pain. The use of the gas should be practised with all suitable guarantee and scientific precaution.

5. Protoxide of nitrogen is of less convenient employment than the fluid anæsthetics, on account of the apparatus which it necessitates.

Art. 107.—*On the Influence of Chloroform in Promoting Cutaneous Absorption.*

By Augustus Waller, M.D.

(*The Practitioner*, December, 1869.)

From a number of experiments, Dr. Augustus Waller, of Geneva, deduces the following conclusions :—

1. Chloroformic solutions applied to the skin of man and animals are quickly absorbed, and produce local and general results according to the substances employed.
2. Alcoholic and aqueous solutions are either not at all or very slowly absorbed.
3. Chloroform easily traverses the dead skin by diffusion.
4. Alcohol does not traverse the skin, but produces an endosmotic current with water.
5. Skin exposed to chloroform in a state of liquid or vapour absorbs a considerable quantity of it.
6. On traversing the septal skin of the endosmometer, chloroform carries with it a certain amount of any alkaloid dissolved in it.
7. These observations sufficiently explain the rapidity of cutaneous absorption during life, without our having recourse to any problematic influence of sebaceous matter on the surface of the skin.

In the course of his experiments Dr. Waller discovered that it was necessary for cutaneous absorption that the heart's action be not in any way diminished, for if it be, no absorption takes place, even after a prolonged immersion. This is owing not so much to the absence of local absorption in the skin, as to the deficiency in the vascular action ; for if we remove the skin of a part that has been immersed, we can detect in its inner surface the presence of the dissolved substance, which, however, from the deficient means of transport in the vessels around, has remained localized and inert in the system.

Art. 108.—*Absorption of Iodide of Potassium by the Skin.*

By Dr. Ferrand.

(*Bull. Gén. de Thérap. ;* and *Edinburgh Medical Journal*, Nov. 1869.)

Dr. Ferrand refers to a case of iodism occurring in private practice, as a consequence of the application to the skin of dry iodide of potassium. This fact, besides showing the possibility of the absorption of dry substances by the skin, affords a new means of administration of this important remedy. The case was that of a female who was attacked by inflammatory symptoms in the pelvic region, accompanied with purulent evacuations through the rectum. After a careful diagnosis, it was established that these symptoms were due to the presence of an immense pelvic abscess, occupying all the space behind the uterus and the broad ligaments. Dr. Ferrand wished to combine with the local symptomatic treatment the internal use of iodide of potassium in pretty

strong doses; but in a few days very distinct symptoms of iodism obliged him to desist, although the fitness of the remedy appeared already manifested by a sensible improvement in the condition of the patient. Scarcely had the iodic phenomena ceased, when the re-administration of the iodide appeared to be justified; but it became necessary to suspend it again after three days. It was then that Dr. Ferrand thought of the application of dry iodide of potassium. With this view he made the patient put on a shirt which had been previously dipped in a solution of two drachms of iodide, and then dried. After three days this shirt was replaced by a second, prepared in the same manner; but towards the end of the fourth day the iodic symptoms recurred. These symptoms were coryza, lachrymation, a sense of weight and pain over the frontal sinuses, a sense of occlusion of the posterior nares, muscular pain extending over the whole region of the neck, constant nausea accompanied with frequent vomiting, and smart fever. All these phenomena corresponded, in fact, with those previously observed during the internal iodic treatment; and although they appeared after a longer lapse of time, when the remedy was applied externally, yet they remained more pertinaciously, showing that if the action of the medicine were a little less prompt, it acted more deeply and persistently than was the case when administered according to the usual method.

Art. 109.—*Methylic Ether as an Anæsthetic.**

By B. W. Richardson, M.D., F.R.S.

(*British Medical Journal*, June 4.)

At the Medical Society of London, Dr. Richardson made a second communication on the application of methylic ether as a general anæsthetic. Methylic ether is made by mixing one part of sulphuric acid with two of pure methylic alcohol, and applying heat. The ether passes over as a gas, having an ethereal odour, and a vapour density of 23, taking hydrogen as unity. To fix the gas, Dr. Richardson passes it slowly through pure ethylic ether, of specific gravity ·730, and boiling point of 95° Fahr.: the gas is being absorbed for several hours, and the result is an ethylic ether saturated with methylic. This is the fluid employed for anæsthesia. Two drachms of the fluid are poured upon domette in a simple mouthpiece, which also covers the nostrils, and the vapour from the surface of the domette is directly inhaled. Dr. Richardson reported eleven cases of tooth extraction in which he had successfully anæsthetized with methylic ether, at the National Dental Hospital; and since Monday, March 14, Mr. Gregson has used it at the Dental Hospital of London, also with great success. Two peculiarities, at least, may be mentioned, as pertaining to the action of the new narcotic:—(1) That it produces quick relaxation of the muscles; (2) That while the patients under its influence are unconscious of pain, they are capable of performing what appear to be conscious acts, which acts, on recovery, are entirely forgotten. The anæsthetic sleep is induced usually within a minute and a half, recovery being perfected as

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* Abstract of a Paper read March 21.

quickly; in no period of the anæsthetic sleep is there asphyxia, and the pulse undergoes little alteration. In short, from the experience as yet obtained, there is promise that, for short operations at all events, methylic ether will fill an important place in our list of remedies. The chemical composition of the ether is (CH_3) 2O.

Art. 110.—*Memoranda Respecting the Administration of Chloroform.*

(*British Medical Journal*, December 4, 1869.)

Preliminaries.—1. Unless very feeble, the patient should fast for three hours before the inhalation.

2. Twenty minutes before the inhalation, a dose of brandy should be given in water—a teaspoonful to a child, one or two tablespoonfuls to an adult.

3. The patient should, whenever convenient, be wholly undressed, and, invariably, everything tight about the chest or neck should be removed.

4. If possible, let the patient be in the recumbent posture, and on his back. Let the chest and neck be well exposed. Whatever form of apparatus be used (a piece of lint, a handkerchief, and Skinner's inhaler, are perhaps among the best), there is little or no risk with the first inhalations; and the patient may be instructed "to draw full breaths." So soon as any effect is manifest, you must be more cautious. Watch carefully the respiratory movements, and the colour of the cheeks, lips, and eyes. When convenient, keep your finger on the wrist-pulse; but this is not essential. If the patient struggle much, proceed with increased caution.

Signs of Danger.—Lividity of Face.—Remove the chloroform, and let the patient have air. Open the mouth and draw out the tongue.

Stertorous Respiration.—Stop the chloroform, open the mouth, draw forward the tongue, and watch carefully.

Irregular Gasping Respiration.—Stop the chloroform, splash cold water on the face, and flip with the towel.

Feeble Pulse.—Proceed with great caution. If the feebleness amount to almost complete failure, stop the administration.

Death-like Pallor.—This, the most dangerous sign of all, must be met without a moment's loss of time. Flip with the wet towel on the cheeks, chest, abdomen, and limbs. Open the mouth, and if, as is usual, breathing has ceased, begin artificial respiration at once. With outspread palms, press the front of the chest forcibly down, whilst an assistant, at the same time, presses the abdomen. Make these movements not oftener than fifteen times in the minute. Air should be heard to enter the trachea. Whilst this is being done, let assistants continue most vigorously to flip the skin in all accessible positions—it cannot be done too much. If the collapse continue, let an ounce of brandy be injected into the rectum. Do not remit the artificial respiration until the patient is quite rallied. If the collapse persist, the efforts at rallying should be persevered with for an hour at least. If a large

catheter be at hand, it may be well to introduce it into the trachea, and inflate the lungs by the mouth. Remember that irregular inspiratory efforts may occur long after death in all other respects has apparently taken place. Do not be deceived by them, but continue your efforts.

Remarks.—The plan of artificial respiration recommended is, we believe, all things considered, the most convenient. The catheter in the trachea is, when practicable, the most effectual plan. Its introduction is not difficult. If the artificial inspirations be made too rapidly, they defeat their own object; nor should they be too forcibly made. If it be needful to continue them more than a few minutes, the operator will find it convenient to kneel astride the patient's trunk.

The administrator ought always to have with him brandy, an enema-syringe, and a large flexible catheter. He ought always, when convenient, to require his patient to be undressed, since it may be very desirable to have the surface accessible.

By "flipping with the towel," we mean twitching the corner of a damp towel in such a manner as to cause the sharpest pain possible. It is by far the most effectual method of awakening a chloroform patient, and should, in case of danger, be practised instanter, and at several parts at once. Its effect is to excite locally the capillary circulation, and indirectly to stimulate the respiratory muscles, and even the heart itself.

Art. 111.—*On the Combined Action of Morphia and Chloroform.*

By Professor Claude Bernard.

(*Jour. Anat. and Phys.*, Nov. 1869.)

In his recent very interesting lectures before the College of France, Professor Claude Bernard points out some remarkable and valuable effects which may be obtained by combining the actions of morphia and chloroform (*Revue des Cours Scientifiques;* and *Bulletin Général de Thérapeutique*, Sept. 30, 1869, p. 241). Some years ago, Dr. Bernard had occasion to administer a dose of morphia to a dog recovering from the effects of chloroform, and he was surprised to observe that the morphia reproduced the anæsthetic effect of the previous dose of chloroform. More recently, this experiment was modified, so that a dog narcotized by morphia was completely and quickly anæsthetized by a quantity of chloroform very much smaller than would have been necessary to produce this effect in a dog in normal condition. It was further found, that when the anæsthesia had nearly disappeared, a second dose of morphia almost immediately reproduced it. It is well known that anæsthesia cannot be induced by morphia. This alkaloid exalts the sensory excitability, and induces torpor and narcotism; it never destroys sensibility. Chloroform, however, rapidly suspends the sensory excitability. It is, therefore, somewhat remarkable that the anæsthetic action of chloroform should be increased and prolonged by morphia. Dr.

Bernard believes that this can be explained only by supposing that the action of the one substance is superimposed on that of the other. When an animal is recovering from chloroform-anæsthesia, the quantity present in the blood is insufficient to completely suspend sensibility, although it is sufficient to greatly diminish it; but as morphia blunts the nervous sensibility, it aids the action of the chloroform, and thus a quantity of the latter, in itself insufficient to produce complete anæsthesia, becomes sufficient to do so when assisted by morphia. Bernard points out that this combination admits of several valuable applications, and that, indeed, it promises to be the best method of inducing anæsthesia. By administering a dose of morphia before commencing the inhalation of chloroform, anæsthesia is induced without any initiatory stage of excitement, and without incurring the risk of those accidents which are occasionally caused by large doses of chloroform.

Art. 112.—*On a Solution of Morphia for Hypodermic Injection.*

By William Martindale, Dispenser and Teacher of Pharmacy to the University College Hospital.

(*Pharmaceutical Journal*, February.)

The mode of administering opiates hypodermically, whereby a much less dose proves efficacious, and the derangement of the stomach and other disagreeable effects, when taken by the mouth, are avoided, has almost become universal in cases where these objections would tend to prohibit their use. To quote Sir William Jenner:*—"Who that has suffered from a painful local affection can think of the alleviation to his sufferings which followed on the subcutaneous injection of an anodyne, without gratitude?"

The solution for the purpose should be an aqueous one, neutral if possible, and of such strength that six minims contain a maximum dose. The syringe commonly used is graduated up to six minims. In addition to this graduation, some have the piston worked by a screw, of which so many turns are equal to a minim; others are worked by pressure in the ordinary manner.

A solution of morphia—one grain in six minims, the most convenient strength—may be made by first dissolving one drachm of the acetate (recently prepared) in about four fluid drachms of hot distilled water, adding a drop or two of diluted acetic acid, if the solution be not complete. Filter into a graduated measure while hot, and, the fluid being all passed through, wash the filter by sprinkling over it sufficient distilled water, that the whole filtered product, when cold, may measure exactly six fluid drachms.

It is important that the acetate of morphia be recently prepared. It

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* See Sir W. Jenner's Address, delivered before the British Medical Association at Leeds, 1869.

has then, as found in commerce, a faint acetic odour, and is an almost pure white dry powder. If of a pale brownish-grey colour and having a somewhat musky odour,—characteristic of age,—it will be less soluble. This is not due to the loss by volatilization of acetic acid merely, as this loss, if replaced, and a complete solution effected by applying heat,—the strength of one grain in six minims being adhered to,—the solution, probably on account of the salt having undergone some molecular change by keeping, will, when cold, become a mass of feathery crystals.*

The solution should not be kept long. When prepared as above, it is almost void of colour, but gradually changes to a vinegar-brown. If the acetate of morphia be not quite fresh, this colour is produced in the solution when first prepared.

Where there is not much demand for the acetate, it will be impossible to have it *always* recently prepared. In such cases it would be better to prepare the solution direct from pure morphia and acetic acid, using 25 per cent. less than would be required of the acetate, to allow for the combined acetic acid.

To make six fluid drachms of the solution in this manner, forty-five grains of morphia and about four fluid drachms of diluted acetic acid will be required. Mix them in a small flask or ordinary ounce phial, and apply the heat of a water-bath till dissolved, adding a drop or two more of the acid, if necessary, being careful that the solution at last is neutral or only slightly acid. Filter as directed above, and add sufficient distilled water to make six fluid drachms. In this solution one grain of pure morphia will have been dissolved in eight minims, and it will contain one grain of the acetate in six minims.

Other salts of morphia might be used with advantage. Among these, the so-called bimeconate is very soluble, and makes a tolerably stable solution. Injected, it appears to be quite as active as the acetate, although it represents about one-fourth less of pure morphia; but being uncrystallizable, its composition as generally made may not be so uniform. The citrate is likewise a very soluble salt.

The hydrochlorate and sulphate require upwards of sixteen parts of water to hold them in solution. This prohibits their use for injecting hypodermically, as a large dose could not be conveniently administered by the syringe in ordinary use. As regards the sulphate, this statement is opposed to the statement of Abl, quoted in Gmelin's *Chemistry*, and Storrer's *Dictionary of Solubilities*, that it is soluble in two parts of water at 18·75° C. (about 66° F.). From repeated experiments, both with the freshly-prepared salt and others, I find this to be an error. This salt of morphia, which is easily crystallizable and very stable, is most preferred in the United States.

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* A case of this kind came under my notice in which a physician had a solution of the above strength prepared at one of the leading dispensing establishments; when required for use, what was intended for a solution was found to be a mass of crystals!

Art. 113.—*On the Effect of Opium and its Derivative Alkaloids.*

By S. Weir Mitchell, M.D., Member of the National Academy of Sciences.

(*American Journal of the Medical Sciences*, January.)

The conclusions which Dr. Mitchell has arrived at in regard to the influence of opium alkaloids on birds are as follows:—

1. Birds: namely, ducks, chickens, and pigeons, are never poisoned by crude opium, its aqueous extract, or acetum opii (black drop) given internally; while the salts of morphia must be given in enormous doses to produce fatal effects when administered in the same manner.

2. Morphia salts, used hyodermically in excessive amounts, never cause sleep or stupor, but act as excitants (convulsants) upon the motor centres. In some instances, the spasms are tetanoid in character; but in the duck they approach nearest to the typical strychnic spasm.

3. Thebaia is a tetanizing agent, only inferior in energy to strychnia and brucia.

Narcotina, almost inert in man, destroys birds when employed hypodermically, in doses of from 2 to 7 grains.

Codeia is a fatal convulsing agent in birds (pigeons).

Meconin causes emesis when given internally, and is harmless if placed under the skin.

Narceia has no perceptible influence, except to disturb slightly the respiratory function.

Cryptopia in doses of one-fifth to half a grain has no effect.

None of these agents cause sleep in the pigeon, duck, or chicken.

The inaction of ingested opium is due, as Dr. Mitchell believes, to two causes.

First, to the very great slowness with which it, as well as morphia, is absorbed. This is shown by the fact that, twenty-four hours after a full dose has been given, the pigeon may vomit it in large quantities. In a few cases, the greater bulk of what he had given was thus rejected; but in many others all was retained

The remaining amount of protection necessary to constitute an insurance against fatal results, must be due to the great difficulty with which pigeons, especially old birds, are poisoned by opiates. Probably elimination is sufficiently rapid to protect the system against a dangerous accumulation of the drug; but since the fæces and urine are evacuated from a common cloac, the author has been unable to study the rate of excretion in a satisfactory manner.

Pigeons, and probably other birds, seem to possess the same peculiarity which causes certain men to exhibit, under opiates, only excitement of the motor ganglia, emesis, and a restlessness, which, with fuller doses, might possibly eventuate in convulsions. The normal sleep of these birds is not nearly so profound as that of man; and, on the other hand, their motor nerve system enjoys the faculty of evolving an enormous amount of force, and, as compared to their cerebral manifesta-

tions, is far more prominent. It is possible that we may discover that equivalent doses may affect more profoundly, in the direction of stupor, the creature taking them in proportion as its cerebral development is greater and its brain more active. Such, at least, seems to be the probable conclusion from a general survey of the effects of morphia on various classes of animals; while, especially in mammals, it will, Dr. Mitchell thinks, be discovered that individual peculiarities come in to modify the result, as they never so distinctly or so frequently do in the lower grades of animal life.

Art. 114.—*Action and Uses of Ipecacuanha.*

By C. D. Phillips, M.D.

(*The Practitioner*, Nov. 1869.)

Dr. Phillips extols the efficacy of the simple powdered ipecacuanha and its wine. It is, he justly considers, an exceedingly safe emetic, and is an unquestionable diaphoretic, whether given in the form of Dover's powder or vinum ipecacuanhæ.

It "exerts a power over all diseased mucous membranes in checking profuse mucous secretions, whether from the air-passages, the alimentary canal, or the genito-urinary apparatus. It is a most useful remedy in spasmodic coughs attended with profuse mucous expectoration and vomiting, especially in those troublesome coughs, accompanied by vomiting, which are incident to pregnancy. Its beneficial operation is clearly discernible in most cases of continued and obstinate retching or vomiting, where the stomach is not primarily affected, but disturbed by sympathy with some other part or organ of the body, whether the primary affection be acute or chronic. There are cases of sickness and spasmodic cough during pregnancy, accompanied by ulceration of the uterus, which fail to yield to it; but in many of these cases it will succeed if a few doses are administered before the patient raises her head in the morning."

He states that he "has now before him twenty-three carefully recorded cases of whooping-cough. In most of these the cough came on in violent paroxysms, continued until a quantity of viscid mucus was ejected from the lungs by the mouth, and often by the nostrils, and increased in intensity until the contents of the stomach were evaeuated.

"In all these cases, where the vomiting had been more troublesome than the whoop, ipecacuanha has given very marked relief.

"The dose recommended is half a drachm of the vinum ipecacuanhæ in four ounces of water, a dessert-spoonful to be taken every one, two, or three hours, according to the severity of the cough. Children under five years old should only take a teaspoonful of the same mixture, but many children of this age can tolerate, and are benefited by, much larger doses.

"In the capillary bronchitis of children, even when complicated with croupy symptoms, it acts well. In these cases the writer orders ʒss of vinum ipecacuanhæ to four ounces of water, a teaspoonful to be taken

every one or two hours, or much more frequently if the symptoms are urgent.

In many cases of nocturnal spasmodic asthma, in which hours are spent in great distress, with livid face and lips, loud wheezing throughout the chest, and want of breath, causing fear of suffocation, if there is no organic disease of the heart or the lungs, ipecacuanha will give quick and marked relief. Five drops may be taken as a dose, repeated every ten to thirty minutes for two or three hours, unless relief comes much sooner, in which case the dose should be diminished and taken less frequently. Care should always be taken to avoid its emetic or nauseating effect.

In these affections of the lungs, its expectorant and anti-spasmodic character cannot be doubted, nor its curative action in controlling and stopping the abnormal secretion of mucus.

Hæmorrhage in the early stage of tubercular phthisis, and in most stages of this disease, when produced by engorgement of the bronchial mucous membrane, and accompanied by little or no acceleration of pulse or increase of temperature, is often readily stopped by ipecacuanha. In hæmatemesis arising from vicarious menses, and also in some cases of menorrhagia, it is very useful.

In many cases of dysentery it lessens the bloody and mucous discharge, and removes the cutting pains and tenesmus, especially in the early and late stages of the disease. In cases of dysentery or diarrhœa, where nausea, vomiting, or retching exists, ipecacuanha will stop the sickness, and at least control the dysentery or diarrhœa. The watery diarrhœa during dentition, the diarrhœa with green evacuations, and the dysenteric diarrhœa, which are so common among children, rapidly yield to this drug. Vinum ipecacuanhæ is effective in dysentery and diarrhœa, but the writer has preferred the pulvis ipecacuanhæ, considering its action more speedy and trustworthy.

It is more necessary to vary the dose in dysentery than in any other class of cases, one grain every one or two hours being quite sufficient with some persons, whereas others require ten, twenty, or more grains as a dose. These larger doses sometimes, when first administered, bring on vomiting, which it is well to avoid; but if the patient is kept lying on the back, and the dose persevered with, it can generally be tolerated, and a rapid recovery often follows.

In the diarrhœa and dysenteric diarrhœa of children, one-fourth to one-half of a grain, with a little white sugar, at intervals of one to three hours, is generally sufficient, but the quantity must be increased if necessary.

Art. 115.—*Physiological Effects of Curara.*

By Prof. Paul Bert.

(*Archives de Physiol.*, No. 5, 1869.)

Professor Bert has made some curious observations on a curarized dog. After paralysis appeared, artificial respiration was started, and continued regularly by means of the ingenious apparatus of M. Gréhant. The

right vagus and sciatic nerves were then exposed and tied. During the succeeding six hours the action of the nerves, the condition of the pupils, &c., were hourly observed, with the following constant results; the pupil of the right side was contracted, while that of the left was widely dilated; galvanization of either vagus caused dilatation of the pupil, with projection of the eyeball and complete stoppage of the heart's action. The left iris contracted under the action of light. An interesting result was obtained when galvanic stimulation was applied to the central portion of the tied (right) sciatic nerve, or to the median nerve—viz., contraction of the bladder, which produced, the sphincter being paralysed, the voiding of a small quantity of urine. This effect could be produced only through the intervention of the sensory nerves of animal life; for it did not follow excitation of the vagi, the sympathetic in the neck, nor the splanchnic nerves. The interest of this observation is apparent when its value is considered in explaining certain well-known phenomena, dependent on the relations between the bladder and the sensory nerves, such as the desire to urinate caused by a sensation of extreme cold, or by entering a bath of cold or hot water. In this experiment also Dr. Bert discovered the presence of sugar in the saliva.

Art. 116.—*Oxide of Silver in Whooping-Cough.*

By William Macfarlane, M.D., of Ballarat.

(*Australian Medical Gazette*, December 15, 1869.)

That oxide of silver shortens the pertussis, Dr. Macfarlane has every reason to believe. This remedy has been employed by him with unvarying success for some years. He is not aware that this drug has heretofore been administered as a remedial agent against whooping-cough. It has also been tried in a case of asthma with marked amelioration of symptoms.

Dose.—One-sixth of a grain, three or four times daily, in any simple powder, up to one year of age.

Art. 117.—*Permanganate of Potassa in the Treatment of Certain Female Diseases.*

By A. M. Williams, A.M., M.D., of Springboro', Crawford County, Pa.

(*American Journal of the Medical Sciences*, January.)

Dr. Williams desires to call attention to certain uses of permanganate of potash, which, so far as he is aware, have not been alluded to by writers. This salt has of late received favourable notice in the journals, and is certainly one of the most valuable articles of the Materia Medica to the surgeon. From his own experience Dr. Williams is led to believe that it may likewise be made of great value to the obstetrician and gynæcologist.

The cases in which the author has found this salt most useful have been those of *excessive purulent* and *prolonged lochial discharge*.

A year ago Dr. Williams was called to see a woman who had been confined about two weeks previous to the visit. She was a primipara, small, and of strumous constitution. The person who attended her during labour was a homœopathist. The labour seems to have been an easy one; the lochia was more than usually abundant, and on the fifth or sixth day it became purulent and highly offensive, growing more so continuously until the author was called. The patient and her husband became much alarmed, and sent for the doctor who had attended her, but were assured that nothing could be done; that it would cease in time, and that interference would be positively dangerous. On Dr. Williams's first visit the discharges were so indescribably offensive that no one could long endure to remain in the room. With a view chiefly to remove this, and for purposes of cleanliness, a solution of permanganate of potash was ordered, grains 10 in a pint of tepid water, to be used by injection, copiously, twice a day. In two days Dr. Williams made another visit, found all the stench removed, and the discharges not only natural in appearance, but far less copious. The treatment was continued two days longer, and the patient was pronounced cured.

The happy manner in which the salt acted in this case induced Dr. Williams to try it further in similar cases, and always with like results. He had used it, however, with a view only of destroying the fetor, but he observed not only a speedy change in the character of the discharge, but a marked diminution in the *quantity*. This led him to presume that in simple cases of *excessive lochia* it might be of service. Dr. Williams regrets that he has not had more abundant opportunities for testing this, and will only say that in two cases of prolonged and excessive discharge that have recently come under his notice, the use of this agent was followed by very speedy relief.

Art. 118.—*The Composition of Chlorodyne.*

By Edward Smith, F.C.S.

(*Pharmaceutical Journal*, January.)

Mr. Edward Smith reports, in the *Pharmaceutical Journal*, an inquiry into the composition of this well known secret remedy. Hitherto, of the formulæ which have been published, two—one by Dr. Ogden, the other by Mr. Squire—have attracted most attention in this country. The difference between these lay essentially in the presence of Indian hemp and capsicum as indicated by Ogden, their absence in the formula given by Squire. But besides this, the proportion of morphia, as given by the two authorities, differed greatly. About the three important ingredients—chloroform, morphia, and hydrocyanic acid—there can be no doubt; no more can there be about oil of peppermint and treacle. The question is whether anything else exists in the compound. Mr. Smith thinks there is no Indian hemp, because the alcoholic extract is soluble in water; but then there is capsicum, as, after the chloroform and

ether, which also give pungency to the mixture, have been distilled off, the substance left behind has a hot peppery taste. He seems to have taken much pains with the analysis. Here is the composition he assigns to chlorodyne:—

℞ Chloroformi, f ℥iv.
Morphiæ mur., gr. xx.
Æther. rectif., f ℥ij.
Ol. menthæ pip., ♏viij.
Acidi hydrocyani i dil., f ℥iv.
Tinct. capsici, f ℥vj.
Mist. acaciæ, f ℥j.
Theriacæ, ad f ℥v.

This is not quite so dark as the original, as no caramel is used. Mr. Smith suggests for it the title Liquor Chloromorphiæ Co., as not likely to be confounded with that of any other compound.

Art. 119.—*On the Toxic Value of Certain Products of the Phenic Group.**

By M. P. Guyot.

(*Gazette Hebdomadaire*, No. 4, 1870.)

1. Phenic acid acts upon the skin, and produces symptoms characteristic of inflammation and tumefaction.
2. The action of phenol is mild when the temperature is low; it is a much more active agent when the temperature is elevated.
3. Pure rosolic acid and coralline are not injurious, and do not act upon the epidermis; when impure they are toxic agents.
4. Rosolic acid may act upon the skin either by the sulphuric acid or by the phenol which it contains, according to the mode of preparation.
5. Coralline prepared with impure rosolic acid and an excess of ammonia, is injurious when introduced into the animal economy; it acts then in consequence of the aniline which it contains. It has no action upon the skin.
6. Prepared as in the two other cases mentioned above, coralline acts upon the skin through the phenol which it contains.
7. Active rosolic acid may be purified by means of benzine.

Art. 120.—*Self-Illuminating Ophthalmoscope.*

By Lionel Beale, F.R.S.

(*Medical Press and Circular*, April 6.)

Dr. Lionel Beale has devised an instrument for ophthalmoscopic examinations, which promises to be a boon to future observers.

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* Communicated to the Académie des Sciences.

A simple brass telescope tube, about an inch in diameter, has a lamp fixed to one side of it, and with another tube, in which is placed a reflector and ophthalmoscopic lens. This arrangement entirely obviates the necessity for the dark room for ophthalmoscopic observations. The patient is told to look with the other eye at an object some twelve feet distant, in order to enlarge the pupil. These ophthalmoscopes are made by Mr. T. Hawksley, 4, Blenheim Street, Bond Street, and with lamp and two lenses complete, cost two guineas.

Art. 121.—*The Stetho-Sphygmograph.*

By T. Hawksley, M.D., M.R.C.P.

(*The Lancet*, December 18, 1869.)

At a meeting of the Medical Society of London, on Nov. 8th, Dr. Hawksley read a paper on the "Stetho-Sphygmograph," as an aid to the physiological and pathological investigation of the functions of respiration and circulation. He exhibited the practical application of the instrument on a case of phthisis pulmonalis, and one of well-marked mitral regurgitation. In every case three simultaneous and synchronous tracings of moving organs are taken—as, for example, the two lungs and the radial pulse; or the heart, the radial pulse, the carotid or the femoral. It was shown that the tracings would show any disparity in the action of the two lungs, also the relation of inspiration to expiration; and, associated with the pulse tracing, it afforded the opportunity of observing, not only the peculiarities or modifications of the circulation, as in the case of Marey's sphygmograph, but in addition, their relation to the respiratory process. By aid of this instrument, any question as to relative time in the transmission of the blood-wave through the arteries may be solved; as, for example, the time occupied in transmission to the radial, the carotid, or the femoral artery. This may be found to have important connexion with the diagnosis of aneurisms and tumours, as well as with diseased states of the arteries with chronic diseases of organs.

Art. 122.—*The Use of Carded Oakum as a Surgical Dressing.*

(*The Lancet*, January 8.)

We are anxious to call attention to a mode of dressing wounds and sores by carded oakum which has been introduced by Mr. Pollock at St. George's Hospital, and which we are disposed to think will supersede to a great extent other methods. Carded oakum was largely used by the American army in the late war; and it has been also used, we believe, at one or two hospitals in this country—the Children's Hospital in Great Ormond Street, for example; but this is the first time we think, that it has been employed in a large general hospital. Mr. Pollock began by using coarse picked oakum about five or six months ago; but

has since procured a better quality from Bell's, in Oxford Street, who now supply the hospital. There are two qualities, one somewhat finer than the other; but Mr. Pollock prefers the coarser of these, which is simply rope shredded in prisons and workhouses, and carded by machinery. It is of a bright-brown colour, with the well-known tarry fragrance. A little of the material is roughly drawn into a suitable shape for covering the wound, then wetted, and applied to it. All discharge is absorbed by the oakum, and any bad odour is effectually destroyed. It seemed to us, as we examined a suppurating wound in one of Mr. Pollock's cases (excision of shoulder-joint) thus dressed, that the tarry principle in the oakum did more than mask the foul odour; it appeared to destroy it. Nothing whatever could be perceived but the pleasant smell of rope so strongly suggestive by association of the sea and ships. Mr. Pollock has employed carded oakum in burns, amputations, senile gangrene, and abscesses of various kinds. He uses it after every operation as soon as any discharge appears. It effectually supersedes, according to his experience, the use of lint, lotions, ointment, or poultices, is cheaper than most other dressings, and more easily applied. In cases of inflammation, by dipping it into hot water and then covering it with oil-silk, a convenient antiseptic poultice is provided, easily made, light, and answering perfectly its purpose. In private practice, carded oakum is likely to become extensively employed, on account of its cleanliness, economy in price (Bell sells it for about 1*s.* a pound, but it will doubtless become still cheaper), and also from the fact that its application is so simple and easy. In bedsores it would be, we should think, peculiarly useful, as, in addition to its other qualities, it would mechanically assist by acting as a pad.

Art. 123.—*On the Clinical Uses of Electricity.*

By J. Russell Reynolds, M.D., F.R.S.

(*The Lancet*, March 5.

Dr. Russell Reynolds says there are three modes in which electricity is applied in medicine. One is simply to insulate the patient on a glass-legged stool, and charge him with electricity from the prime conductor. This plan will sometimes cure sciatica or tic. There are two modes in which galvanism is used, continuous and not continuous. The continuous current, made by introducing the body into the circuit of the battery, will relieve spasms in some cases, or headache, or tremor. When weak this current produces little or no pain. In the interrupted current, with which all are familiar, the "direct" application—*i.e.*, the application of the positive pole of the battery with the upper part of the limb, produces more obvious effects on the muscles than does the "inverse." The third form, Faradization, or magneto-electric electricity, is of high tension, causes no sensation of heat, but produces marked contraction of muscles and powerful effect on the nerves. It exists only at the moment of making or breaking the galvanic current. No con-

clusion can be come to as to the irritability of a limb in palsy if one experiment be compared with another—one with an induced, the other with a battery current.

Art. 124.—*Thermometric Observations in Clinical Medicine.*

By J. F. Goodhart.

(*Guy's Hospital Reports*, vol. xv. ; and *British Medical Journal*, March 19.)

The mode of using the thermometer is somewhat different from the one usually adopted. The author retains it in the axilla only three minutes; "but the bulb is held there, the thumb and finger keeping it in close approximation with the skin" all the time. He defends the brief period of time on account of the diurnal variations, and gives instances of fluctuations in health and disease from his own observations and those of Dr. A. H. Garrod. From independent observations he arrives at the conclusion that rigors depend upon a disturbance of the balance of the circulation, and are accompanied rather by an increase than a diminution of arterial tension. The general results of his observations on zymotic diseases, ague, &c., confirm those of Wünderlich and other observers—the figures being rather lower from his method of observation. The following, however, are deserving of special notice. In two cases of syphilis in the eruptive stage, the evening temperature in one exceeded the morning by from ·2 to 1·2 deg. Fah.; in the other, by 2 to 2·8 deg. In a case of tertiary syphilis, the evening temperature was from $\frac{1}{2}$ to 1 deg. Fah. higher than the morning on several occasions. Under acute rheumatism he gives the following statement. Nine cases treated with alkalies, had an average maximum temperature of 101·2 deg.; 7 cases with lemon-juice, of 102·5 deg.; 9 cases with various drugs, calomel, opium, aconite, &c., of 103 deg. In uncomplicated cases of pleurisy, the temperature never rose above 100 deg. Again, in 6 cases of peritonitis, the same thing was observed. In a case of leucocythæmia, the temperature varied from 99 to 101 deg. with evening exacerbations, thus resembling tuberculosis. His observations on the effects of quinine, alcohol, and baths, on temperature, are very interesting. Thus of 18 cases where quinine was given, it either appeared to arrest the rise or cause a fall in 11; while of 20 cases treated with alcohol, only 6 appeared affected, and those not very greatly. But he admits that the mode of experimenting was not quite parallel in the two kinds of experiment. The article concludes with some striking instances of the use of the thermometer in diagnosis, and with a table of 43 observations on patients *in articulo mortis* from various diseases and accidents: of these, 35 had a temperature at or above normal (96 to 98·6 deg., being considered normal); eight were lower than this.

Art. 125.—*Cases of Cholera treated by Hypodermic Injection of Liquor Ammoniæ.*

By A. Christison, Civil Surgeon, Agra.

(*Indian Medical Gazette*, October, 1869.)

The following cases are placed on record by Mr. Christison :—

Case 1.—A European girl, aged thirteen, was admitted into hospital at the Roman Catholic Institution at Agra, on the morning of the 11th of August. When I saw her she was collapsed, with no pulse to be felt in the arm or at the temples ; her senses, however, were clear. The usual application of mustard plasters to the loins, stomach, and legs, and hot bottles where required, had been made, and the diffusible stimulant treatment had been steadily carried on. Having watched for some time, and seeing no progress had been made, I injected ammonia, as recommended by Dr. A. R. Young, of the 60th Royal Rifles. Ten minims were injected near the shoulder, and fifteen minims soon after on the back of the hand. The girl complained a little of the pain, but did not withdraw the hand. In a few minutes she became somewhat less collapsed, and expressed herself as better, and in the course of half an hour the pulse had returned at the temples, but not at the wrist. Two hours after this the pulse was perceptible at the wrist, and the patient was soon out of danger.

The ammonia caused rapid reddening of the skin, and death of a portion, of the size of a small almond. The girl did not ultimately survive, for, during convalescence, she had violent hæmorrhage from the mouth and nose, and died from exhaustion. I observed no very prominent effects from the ammonia, but there was a very gradual improvement after the injection, which, I think it fair to believe, may have been due to that treatment.

Case 2.—On the 13th of August, I found a girl of thirteen in a state of collapse in the same institution, but not actually pulseless. The usual treatment was of no use ; therefore, seeing that the pulse was gone, I injected 18 minims of ammonia near the shoulder in two portions. The girl was quite in her senses, and said she felt better, complaining, not of the injection, but only of the mustard applications. I could trace no general effect, and no return of pulse from the ammonia.

About two hours afterwards, as she was much worse, I injected 20 minims near the other shoulder, but no effect whatever could be observed, and the patient died at 2 P.M.

Case 3.—A native traveller was admitted into the Thomason Hospital with cholera, nearly collapsed, but with pulse quite perceptible. Twenty minims of ammonia were injected near the shoulder by Sub-Assistant Surgeon Beepin Beharry Bose, in my presence, and the case was watched carefully by him, and Sub-Assistant Surgeon Doyal Chunder Shome, M.B. They observed no improvement in the pulse or in the man's general condition. The injection was repeated when he was further exhausted, but without any effect, and the man died.

"Though these cases are not encouraging, I hope that further experiments will be made with ammonia and other substances used by the hypodermic method, as it appears to me this is the direction in which we may yet hope to obtain success.

"The liquor ammoniæ used was weak, the density being nearly 1000, instead of 0·950 ; but I found that liquor ammoniæ fort. was no

stronger, owing to evaporation due to the heat. Perhaps better results might be attained by using strong ammonia prepared and preserved for the purpose."

Art. 126.—*On the Therapeutical Employment of Compressed Air in Asthma and Emphysema.**

By Dr. Gent.

(*Archives Générales de Médecine*, Décembre, 1869.)

According to Dr. Gent, compressed air is a sedative agent both to the circulation and the respiration, and a tonic to the bronchial mucous membrane. It is suited to all the diseases of the respiratory passages; laryngitis, bronchitis, catarrh, chronic pneumonia, emphysema, asthma, and whooping-cough. From its exciting digestion and the great quantity of oxygen it transmits to the blood, it is especially suitable in cases of chloro-anæmia.

Art. 127.—*On Cutaneous Absorption.**

By Dr. Brémond.

(*Gazette Hebdomadaire*, No. 4, 1870.)

The following are the chief results derived from a course of experiments made at the Imperial Asylum of Vincennes:—

"The cutaneous absorption of non-volatile medicinal substances cannot be denied, and has been established in a most decided manner by experimentation.

"In ordinary cases it is only possible at a temperature of 38 degrees (centigrade).

"By the previous employment of a vapour bath, followed by soaping and energetic friction over the whole body, one may cause iodide of potassium to be absorbed by the skin, at temperatures below that of the body.

"In a vapour bath the amount of absorption increases in direct proportion to the elevation of the temperature of the bath, its duration, and the quantity of iodide of potassium.

"The elimination of this salt commences about an hour after the bath, and ceases within twenty-four hours.

"After the patient has taken from ten to a dozen baths, elimination takes place during three or four days; if from twenty-five to thirty baths have been taken, it persists for eight or ten days."

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* Communicated to the Académie de Médecine.

Art. 128.—*Hyposulphite and Bisulphite of Soda in Intermittent Fever.*

By John P. Little, M.D., of Richmond, Va.

(*American Journal of the Medical Sciences*, January.)

For some years past Dr. Little has been using the hyposulphite and also the bisulphite of soda as a substitute for quinia in the treatment of intermittent and remittent fevers.

It was first used as a febrifuge in measles, scarlet fever, and similar affections; accidentally its value in fevers of a malarious origin was discovered, and Dr. Little at once gave it a thorough trial.

Intermittent forms of fever prevailed very extensively immediately after the war; and as quinia generally failed to give relief, Dr. Little made free and frequent use of this remedy, and with marked good effect.

He has used it in his own case; quinia had failed in removing his fever, although it had succeeded in producing an intense headache; the hyposulphite speedily relieved him.

For an adult the dose is from ten to twenty grains every three or four hours. Dr. Little has given thirty grains every two hours in cases of high fever. Dissolve each dose in a wineglassful of water. As it is a mild laxative there is no necessity for the use of purgative medicine. Of the two salts, Dr. Little considers the bisulphite the better in its effects.

Art. 129.—*Hæmostatics.**

By William Hargrave, F.R.C.S.I., Professor of Surgery in the Royal College of Surgeons in Ireland.

(*Medical Press and Circular*, February 23.)

The following extracts show that there is no unanimity of practice among the following five hospital surgeons of London:—

Guy's Hospital.—The surgeons have not used the ligature for two or three years; all the vessels were twisted.

St. Bartholomew's Hospital.—The ligature was almost the invariable practice; acupressure seldom or never practised.

London Hospital.—Mr. Maunder has extensively used torsion, and with excellent effects.

St. Mary's Hospital.—Mr. Gascoigne did not remember to have seen the practice used once—*i.e.*, torsion.

University College Hospital.—Mr. Heath had used torsion, and was well contented with his success.

Middlesex Hospital.—The only one where any stand was made for acupressure, torsion had not been employed to any extent; Mr. Moore was too perfectly well satisfied with the result of acupressure to use any other method.

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* Read before the Surgical Society of Ireland.

Paget states that torsion had been practised at Hamburg for fourteen years, and had to be given up, though it had excluded the ligature for that period, partly from its tediousness, and partly from one reason, want of confidence in it. He thought well of acupressure, as it had succeeded with Keith and Pirrie; no secondary hæmorrhage had occurred when this method was used. He commended the ligature as very secure.

In a paper before the Surgical Society of Ireland by Dr. McDonnell, he advocates the torsion of arteries, as it seems, to the exclusion of all other means for arresting hæmorrhage. Surgeons possess no less than seven ways for controlling hæmorrhage from arteries—the ligature, acupressure, torsion, or twisting, then actual cautery or cauterization, cold, styptics, and compression by suitable means. Mr. Hargrave confines his attention to the first form of these methods:—1. The ligature, which he designates as the *instrumentum instrumentorum*, for completely arresting hæmorrhage from an artery, if made of a proper material, and properly applied, for which purpose he would refer to Jones *On Hæmorrhage*, it will still support the test of its virtue, which it had maintained since the time of its inventor, Ambrose Paré. Whether the patient is under any anæsthetic or otherwise, it is readily and expeditiously applied, even by an inexperienced surgeon. Whether is silk or hemp the best material to use? The author is satisfied that the last is the best, and produces no irritation, and retains its integrity and strength as long as it remains on the artery and in the wound. The hempen ligature which Mr. Hargrave used on the left common iliac artery, when cut off from the vessel on the twenty-first day, was as sound and strong as the first moment that it had been applied. Mr. Paget is in favour of the ligature. 2. Acupressure has been tried, the author will not say found wanting, but it has few advocates, and in some cases is not easy of application. Mr. Hargrave has never used it himself; it was tedious, and in some cases delay and difficulty occurred in withdrawing it from the stump. In one case he witnessed the attempt to compress the anterior tibial in amputation; by this means it did not succeed, when the now apparently superseded ligature was brought to the rescue, and successfully secured the bleeding vessel. 3. Torsion, or twisting, may have its advantages, but also disadvantages in its application. As to the number of twists, few or many, which it appears to require, can only be defined by much practical experience, derived from extensive hospital opportunities. The author has used it himself upon small arteries, but never upon the femoral or brachial, and would not do so unless he had Amussat's two forceps, one to secure the vessel transversely, the other to twist it below the seizure by the transverse one. As to the value of torsion in controlling arterial hæmorrhage, Mr. Erichsen says, "whatever way it is practised, more particularly when the end is twisted off, it possesses the great disadvantage of being less safe, and is certainly far less safe than the ligature on the larger arteries; the smaller arteries in operation may be twisted."—Erichsen's *Science and Practice of Surgery*, vol. i. p. 176.

Mr. Heath, who is a great advocate for it, says that "torsion before everything needs good eyesight; that surgeons, finding the difficulties

of the method increasing with increasing years, mostly returned to the old ligature, and that their pupils, seeing the change in their seniors' practice and not perceiving the motive, themselves abandon torsion!" It is Mr. Hargrave's sincere desire that the pupils will still follow their seniors in depending upon the simple ligature till something superior to either torsion or acupressure is given to them. 4. Cauterization can be classed with the antique, with the candescent iron, if possible, at a white heat, not painful, and the modern, which is named the gas cautery. In the cases which cannot be acted upon by the means now examined, the actual cautery is our *ultimum remedium*, and occasionally averts all hæmorrhage. As to what is named the gas cautery, Mr. Hargrave has seen it used *ad captandum*, and the assistants' fingers bled from its fiery wild effects, but it was of no use to stay the arterial hæmorrhage from vessels of any size; it is a mere bagatelle, and may be called the sensational but useless cautery. In the report of the meeting on the important subject of hæmostatics in the London Clinical Society, and in the Surgical Society of Ireland, one important omission Mr. Hargrave thinks has been made by both—they have merely attended to mechanical means, without ever considering the condition of the blood, whether in health or not. This state of it is of much consequence to the surgeon; by attending to it he can leave his patient with an easy mind, almost to a certainty that there is no risk of secondary hæmorrhage. On the contrary, he must be on the alert for some time, in expectation of secondary hæmorrhage occurring. To Mr. Hargrave the remarkable omission committed by all who have given us their ideas on this question, not one word or observation has been said or made on the subject of the coagulability or non-coagulability of the blood during the operation, which has been shed during its performance. If it coagulates, however the vessels have been secured it matters not, there is very little risk, if any, of secondary hæmorrhage. If, on the contrary, there is no coagulation, the blood presenting the appearance of water coloured red, however the surgeon may secure the vessels by ligature, acupressure, or torsion, let him be prepared for secondary hæmorrhage. Mr. Hargrave believes the only means which he has of preventing it is to call in to his assistance a means which he has always at command, the exposure of the wound to atmospheric cold, which he can state, in some cases has completely controlled it. The author particularly alludes to those cases in which we see the blood oozing drop by drop, no coagulation, and the patient slowly sinking into death.

Art. 130.—*On Flexion as a Means of arresting Hæmorrhage.*

By Dr. Adelmann.

(*Langenbeck's Archiv*, Bd. xi., Heft 2, 1869.)

Dr. Adelmann reports six cases in which traumatic hæmorrhage was permanently arrested after forcible flexion of the injured limb. The radial artery had been wounded in one case, the ulnar in two cases, and

the palmar arch in one. One patient had severe bleeding from a wound near the elbow-joint, and the sixth case was one of gunshot wound of the right foot, followed at the end of eight days by severe arterial hæmorrhage. In all instances there was complete recovery after the employment of forcible flexion.

The following conclusions are laid down by the author :—

1. Forcible flexion is a sure and ready method of hæmostasis in cases of wounds of the limbs.
2. It should always be tried before having recourse to caustics or to a bloody operation.
3. It may be tried after deligation of an artery has failed.
4. This method is to be especially recommended in military surgery.
5. It is desirable that the knowledge of this hæmostatic method should be vulgarized, so that the patient may be able to apply it whilst awaiting the coming of the surgeon.

Art. 131.—*A Case of Angina Pectoris relieved by Nitrate of Amyl.*

By F. E. Anstie, M.D., F.R.C.P

(*The Lancet*, March 5.)

At a meeting of the Clinical Society of London, held March 5th, Dr. Anstie communicated a case of angina pectoris relieved by nitrite of amyl. The patient was a gentleman aged about fifty, of a highly nervous temperament, a sufferer for the last twenty years from spasmodic asthma, and very liable to facial neuralgia. Between four and five years since he began to suffer from severe and frequently recurring attacks of angina pectoris, and his life was for a long time in much danger. By the use of sulphuric ether in large doses, and of considerable quantities of alcoholic stimulants, the attacks were diminished in frequency and violence; but they have never ceased to recur at intervals whenever the patient was much fatigued or excited in the course of his professional work. In December last it was determined to try the nitrite of amyl, and on the recurrence of the next anginal spasm the sufferer took one long and powerful inspiration through one nostril from a half-ounce bottle of the drug. After a pause of a few seconds, the characteristic flushing of the face and sense of fulness in the head were induced, and the patient instantly passed from agony into a state of perfectly calm repose. The experiment has been several times repeated on the recurrence of the heart-pang, and always with complete success ; and the result has been most fortunate, as the patient has been able to entirely dispense with the disagreeable necessity of taking large and frequent doses of ether, and also greatly to reduce his allowance of stimulants. There has also been much less trouble than formerly from asthma, and he has obtained far more natural sleep at nights. The angina, although very severe, appears to be purely neurotic ; no cardiac change, or at most a small amount of dilatation, can be discovered by the most minute physical examination. From some further observa-

tions, Dr. Anstie believes that amyl is a relaxer of spasm in all involuntary muscular fibre, and that it would be particularly useful in colicky affections. He would not, however, advise its use by aged persons or others who might be likely to have commencing degeneration of the minute vessels of the brain, for fear of apoplectic accidents.

Art. 132.—*On Digitalis in Heart Disease.*

By Sydney Ringer, M.D.

(*The Practitioner*, January.)

Dr. Sidney Ringer considers that digitalis is eminently useful in cases of enlargement of the heart accompanied by dilatation, with dropsy, general venous congestion, and a frequent, feeble, fluttering, and irregular pulse, with or without valvular disease, and quite irrespective of the nature of that valvular disease. That is, he thinks it just as useful in obstructive or regurgitant aortic disease as in mitral, provided the above symptoms, and especially the irregularity of the pulse, be present. He thinks it of importance to give no more of the drug than is necessary for the relief of the patient; and that, in many cases, one drachm of the infusion twice or thrice a day will be sufficient. Should, however, no improvement be observed after the lapse of four or five days, the dose must be increased. In other cases, both in young and old patients, an earlier stage of this severe disease may be present, characterized by palpitation, dyspnœa, tumultuous and often forcible action of the heart, with feeble and frequent but generally regular pulse, no dropsy, and no lividity of the skin. A mitral murmur, often accompanied by apex thrill, is generally to be detected, and sometimes the signs of aortic valvular disease are also present, but these signs do not contra-indicate the use of digitalis in such cases, in which it is most useful in controlling the heart's action, increasing the firmness and fulness of the pulse, and relieving the dyspnœa. When no dropsy is present, there seems to be no diuretic action produced. Dr. Ringer believes that in all such cases digitalis acts by restoring order to the heart's movements, thus removing any regurgitation caused by irregular action of the columnæ carneæ, with the venous congestion and dropsy thereon depending. Hence it can only remove, with completeness, symptoms depending on dynamic regurgitation, leaving untouched those arising from organic valvular disease; so that, in a complicated case, it can only be productive of partial benefit, being only useful in proportion to the degree in which dropsy, &c., is due to the irregular action of the heart, and is independent of organic disease. Digitalis he considers very useful in cases where persisting palpitation, with or without slight mitral murmur, has been much aggravated by an attack of bronchitis, but of no use whatever where pre-existing lung-disease (emphysema) has become complicated by secondary heart-affection and dropsy. He also regards it as of no use, and possibly hurtful, in cases of aortic

disease (obstructive or regurgitant), accompanied by palpitations, dyspnœa, and dropsy, but where the heart and pulse both beat regularly and without any intermission, the latter having frequently the characters significant of aortic regurgitant disease, with a pale waxy skin, no lividity, and no fulness of, nor regurgitation into, the jugular veins.

Art. 133.—*On the Properties and the Mode of Elimination of the Nitrites of Sodium and Potassium.*

By Dr. Rabuteau.

(*Gazette Hebdomadaire*, No. 8, 1870.)

1. The nitrites undergo oxidation in the economy and are transformed into nitrates. If the ingested dose be feeble, one gramme for example, these salts are entirely eliminated in the condition of nitrates; if the dose be strong, these are eliminated partially in their natural condition. The salivary glands seem to eliminate these salts with greater facility than the kidneys.

2. The nitrites are dangerous when given in doses which are relatively but slightly increased. In fact, five grammes of nitrite of sodium injected into the veins of a dog will cause death. It is the nitrite salt that causes death and not the metal; for it is known that sodium when combined with an almost inactive metalloid itself acts as an inoffensive metal.

3. One may range the nitrites among the poisons of the blood-corpuscles, on account of the changes which they produce in the blood. They are oxydized at the expense of the oxygen of the blood-corpuscles which they render incapable of hæmatosis; the consequence of this fact should be a diminution of urea. This diminution, however, has not been made out in man after the ingestion of feeble doses of nitrite of sodium.

Art. 134.—*Action of Various Substances on Urine.**

By F. B. Nunneley, M.D., York.

(*British Medical Journal*, February 26.)

The author had made upon himself experiments as to the action of citrate and acetate of potash, of spiritus etheris nitrosi, and oil of juniper, on the urine in health. The method pursued was to estimate the water, urea, and solids of the urine each day for about twenty-eight days, during the middle twelve days of which the medicine was taken, the days before and after being medicine-free. Citrate of potash, taken to the extent of from ten to eighteen drachms in twenty-four hours,

* Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, Feb. 8.

increased the water by 2½ ounces, and diminished the urea by 84 grains, and the solids by 60 grains. The acetate of potash, in daily doses of from 2½ to 3½ drachms, excrted a similar influence in a somewhat less degree. The spiritus etheris nitrosi (10 to 18 fluid drachms in twenty-four hours) slightly increased the water, and diminished the urea by 54 grains, and the solids by 122 grains. The oil of juniper (30 to 40 minims in twenty-four hours) slightly increased both the urea and the solids.

Art. 135.—*Copaiba as a Diuretic.*

(*Medical Press and Circular*, Jan. 5.)

The physicians to the Middlesex Hospital are much in favour of copaiba as a diuretic. It is given in a mixture containing ten minims of copaiba; seven minims of liquor potassæ in a half-ounce of mucilage and caraway water. It seems to succeed in Bright's disease when other diuretics have failed.

Art. 136.—*On Haschisch in Hydrophobia.*

By Professor Polli, of Milan.

(*Medical Press and Circular*, December 15, 1869.)

The following case is related by Professor Polli:—

"A man, aged thirty-eight years, was admitted into the Grand Hospital of Milan on May 12, 1860, who had been bitten by a mad dog a month previously, and who was already suffering with all the symptoms of hydrophobia. I determined to treat him solely by haschisch. I employed the brown-black extract which I had used in the experiments on myself. He was made to swallow half a gramme (7·7 grains) of it every four hours for five times, so that he took altogether 2½ grammes (38·5 grains) of this extract of Indian hemp. It was cut into small pieces and placed on the tongue; the swallowing of the drug was assisted sometimes by a little sugar, sometimes by a little milk, and sometimes by a little tincture of aniseed. The action of the haschisch taken by the mouth was aided by enemata of an aqueous infusion of coffee, 80 grammes (3·8 ounces) of powdered coffee to a litre (1·76 pint) of water, which was repeated. In a period of less than twenty-four hours this hydrophobic patient had taken two and a half grammes of extract of Indian hemp, and a litre of infusion of coffee by the rectum. This treatment did not dispel the characteristic phenomenon of horror at the swallowing of water or of any fluid; neither was there freedom of alvine dejections or of emission of urine. The patient remained very constipated, and the urine had to be removed by the catheter. The patient succumbed fifty-six hours after his admission into the hospital; but the evident effect of the haschisch taken was an amiable good humour, a species of gaiety, and of reliance on medical aid; and the cessation of the delirium, the terror, and the convulsive madness which seizes on all hydrophobic

persons to such an extent that it is necessary to use physical constraint. Bright light also, the reflection of shining bodies, currents of air or of the breath, which are insupportable by ordinary hydrophobics, in him produced no disagreeable impression. This patient was left at liberty, that is, without any bonds, lying free on his bed; and this tranquil state lasted forty eight hours after the commencement of the treatment by haschisch, and was only interrupted by some convulsion or grimace, which slowly became more frequent, and by the menace of suffocation from the foam at the mouth as the mortal symptoms increased, until his death.

"The haschisch, without curing the hydrophobia, removed the greatest part of its horrible symptomatology; a result accomplished neither by opium, nor by morphine, nor by daturine. Haschisch then is the best palliative or sedative in hydrophobia. It changes a raving, unmanageable, suspicious, aggressive maniac, who bites and who curses, into a poor invalid, content and tranquil, who blesses you."

Art. 137.—*Quinine as an Antipyretic.**

(*Medical Press and Circular*, Dec. 8.)

The following remarks on the antipyretic properties of sulphate of quinia are extracted from the *Report of the Medical Department of the Royal Hospital, Christiania, for the year* 1867 (*Norsk Magazin for Lægevidenskaben*, Bind xxiii. Hefte 1). The author, Dr. Fr. Stabell, says:—"I have nothing further of special interest to mention respecting these 33 cases of typhus, except some experiments which were instituted for the purpose of investigating the effect of single large doses of quinine as an antipyretic.

"This is a subject to which Professor Liebermeister, of Bâle, has paid great attention, and he has published on it a long and very profound essay (*Deutsches Archiv f. klinische Medicin*, third volume, first and sixth parts). He ascribes to quinine a decided and almost invariable temperature-reducing effect; and in proof of this adduces a number of temperature observations. I shall communicate the results of two of the experiments which were made in 1867. They are not so numerous that one can, to any extent, draw a conclusion from them, nor are they intended to do more than to contribute their share towards the corroboration of the experiments which were subsequently made. Quinine was exhibited in doses of gr. xx. or gr. x. in six typhus cases, at several separate periods.

"I shall give a brief outline of the history of the case, with the variations of the temperature and pulse in two of these patients:—

"Karen Kristoffersdatter, aged fifteen, admitted Sept. 11, 1867. She had, fourteen days previously, had shivering, with subsequent nervous symptoms; all the time the motions were regular. On her admission, isolated rose spots were found upon the abdomen.

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* Translated for the *Medical Press and Circular* from the *Norsk Magazin for Lægevidenskaben*, 1869.

Date.	Temperature.		Pulse.	Observations.
	Morning.	Evening.		
	°	°		
Sept. 11	—	100·6	120	
,, 12	101·7	Not taken.	120	
,, 13	Not taken.	104·0	—	Diarrhœa.
,, 14	102·2	103·6	—	
,, 15	100·8	102·7	120	
,, 16	102·0	—	—	
,, 17	—	102·9	—	
,, 18	102·6	102·7	—	
,, 19	101·7	101·8	—	
,, 20	100·6	104·0	—	
,, 21	101·7	103·3	—	Moderate diarrhœa, less stupor, rather more bronchitis.
,, 22	101·1	103·6	—	
,, 23	101·8	102·9	—	Got 6 grs. of sulphate of quinia three times a day.
,, 24	100·4	101·7	—	
,, 25	100·6	102·2	—	
,, 26	100·4	102·7	120	
,, 27	101·7	104·0	—	
,, 28	102·2	103·6	—	Rather more diarrhœa.
,, 29	102·7	102·6	—	
,, 30	101·8	101·8	—	Regular motion.
Oct. 1	101·5	102·2	—	Takes the quinine in one dose, that is, gr. 18, in the evening.
,, 2	99·5	101·7	—	
,, 3	99·5	103·1	—	Quinine, gr. 20.
,, 4	100·6	99·0	—	
,, 5	101·7	104·0	120	Received intelligence of her mother's death.
,, 6	102·2	104·0	—	
,, 7	102·6	100·8	—	Quinine, gr. 20.
,, 8	98·6	101·1	—	
,, 9	101·7	103·8	—	
,, 10	102·7	104·0	—	Quinine, gr. 10.
,, 11	99·7	102·6	—	
,, 12	101·1	102 9	—	
,, 13	101·5	101·8	—	

"From this day the temperature fell gradually, and no more quinine was used. On the 2nd of November she was discharged, convalescent.

"While then this patient got, on September 23rd, six grains of sul-

phate of quinia three times a day, both the morning and evening temperature during the ensuing two days fell about a degree, but afterwards again rose, though she persevered with the same dose of quinine, until it attained its former height. On the 1st of October she takes her three quinine powders at once in the evening, and the following morning the temperature sinks lower than it had been at any time since her admission. This, however, is sufficiently evident, that the temperature on the evening of the 4th is equally low, although she has not taken quinine. Contingencies such as these should make one cautious in drawing too hasty conclusions. On the evening of October 5th we have a violent rise of temperature, the reason for which is assigned above; but the effect of quinine is not absent on this occasion either, just as three days later, when she got but ten grains only.

"Although these temperature reports demand much time and space, I cannot omit to notice, with some detail, another case, in which the effect of the quinine was so considerable and so constant that here we cannot assert, what we might in other instances be inclined to hold, that this effect is to be attributed either to the operation of chance or to inaccurate observation.

"Mrs. Janette Nilsdatter, aged thirty-one years, was admitted October 1st, 1867, from Sagene (Eriksen's brick manufactory). Eight days before she had had shivering and ordinary symptoms of fever, with constipation. On the abdomen was a scattered eruption, partly consisting of rose spots, partly of petechiæ.

Date.	Temperature.		Pulse.	Observations.
	Morning.	Evening.		
	°	°		
Oct. 1	—	103·5	84	
,, 2	104·0	104·7	—	
,, 3	103·6	104·9	84	Quinine, gr. 20, evening.
,, 4	97·5	99·9	—	
,, 5	100·9	104·7	—	
,, 6	102·9	102·9	—	Quinine, gr. 20, 10 A.M.
,, 7	102·2	104·7	68	Quinine, gr. 20, evening.
,, 8	100·4	104·4	—	
,, 9	102·9	104·5	—	Quinine, gr. 20, evening.
,, 10	97·0	101·8	—	
,, 11	101·7	101·1	—	
,, 12	103·6	105·1	—	
,, 13	104·0	104·9	—	
,, 14	99·3	102·7	—	
,, 15	101·5	103·8	—	
,, 16	101·8	104·4	—	
,, 17	99·7	104·0	—	
,, 18	100·0	102·0	—	
,, 19	100·4	101·8	86	

"I do not extend this table further, as the later notes possess no special interest. She was discharged convalescent on the 3rd of November. It appears then, in this case, that while on the evening of the 3rd of October, the temperature being 104°·9, the patient got twenty grains of quinine, the result was, that the next morning the temperature was nearly 7½° lower (97°·5), and nearly 5½° lower than it had been the preceding morning. On the 6th of October she got twenty grains of quinine, with the effect that the evening temperature was nearly a degree lower than on the preceding or the following evening. Now, this is to be observed, as well in the present as in other cases, that the antipyretic effect of the quinine is more marked when it is seconded by the normal morning remission.

"I may also call attention to the fact that so pronounced an antipyretic effect of quinine as that in the cases mentioned above, I have never since seen or found alluded to elsewhere, so that it may certainly be regarded as very exceptional. On the other hand, too, I have seen the quinine to have been altogether without effect; but this also is exceptional. In general, we may with safety venture to say that the effect is tolerably certain, especially when the remedy is given towards evening or in the course of the night. Liebermeister is said also to have found that the longer the disease has lasted, the more striking is the effect. He believes that prognostic significance may be attached to the effect of quinine on the temperature. In a case which threatens to be of great severity the influence of quinine on the temperature is little or nothing, whereas it is considerable in a case which will have a favourable result. It appears to me that in this rests an acknowledgment that the disease is in reality not much influenced by the therapeutic agent in question. Since it fails exactly in the cases where it is most required, and is efficacious only where its exhibition is not called for, the use of quinine is on the whole manifestly of but little value. Although we can here, by means of an accurate physical instrument, measure the efficacy of the medicine, and although this, in the present case, is not inconsiderable, we must yet admit that it exercises no specific influence on the progress of the disease. Of the typhus patients who, at the time to which this report refers, took quinine in the way mentioned above, one died. The immediate cause of death in this case was hæmorrhage from the bowels. The patient had twice, in the course of the disease, taken an evening dose of 20 grains, and each time with perceptible influence on the temperature."

So far, Professor Stabell. In the same number of the *Norsk Magazin*, Professor Liebermeister's investigations on this subject are again alluded to in a report on the Treatment of Enteric Fever (*Om Behandlingen af Abdominaltyphus*). The use of quinine in heroic doses is thus spoken of:—

"Earlier experiences had imbued the author (*i.e.*, Liebermeister) with the conviction that the perils of typhus might be to a great extent lessened by an antipyretic treatment. Besides cold water, quinine in large doses had pre-eminently maintained its antipyretic efficacy.

"Some observations seemed to entitle us to hope that quinine, when given perseveringly and for a long time in repeated doses, might perhaps

have a still better effect than when given in single large doses. Experiments were instituted on an extensive scale, but the results were altogether unsatisfactory. The considerable diminution of fever which, almost without exception, was seen in a short time after the administration of a large dose, was not found; not once was the result the same when some considerable quantity was given in repeated doses as when single large doses were exhibited. No doubt the fever curve seemed to run somewhat lower where the quantities given were not too small. But the strong remissions, which are of obvious advantage to the patients, did not occur. It is also evident that the persistent use of quinine did not exercise any specific influence whatever in cutting short the disease. In consequence, the author, whenever he desired its antipyretic effect, employed full doses (20 or 30 grains, or less, according to circumstances) within as short a time as possible—at the most two hours, and repeated this dose, should the fever return after two days, but never before the lapse of thirty-six hours."

Art. 138.—*Carbolic Acid Preparation.*

By T. A. Redwin.

(*Chemist and Druggist*, December, 1869.)

Mr. T. A. Redwin, in a paper read before the British Pharmaceutical Conference, gives the following as advisable proportions in the use of carbolic acid:—

As a rule it is better to dissolve the crystallized carbolic acid (Calvert's) in the proportions of one part by weight of the acid to six of glycerine (carbolate of glycerine). In this state it can be diluted equally indefinitely.

In general, a *dose* of carbolic acid is 1 grain in an ounce of water.

As a *gargle*, 1 or 2 grains to an ounce of water.

As an *injection*, 1 grain to 4 ounces of water.

As a *lotion*, 15 grains to an ounce of water.

As an *ointment*, 30 grains to an ounce of benzoated lard.

As a *liniment*, 1 grain to 20 of olive oil.

As a *plaster*, 1 part of carbolic acid to 3 of shellac.

The crystallized carbolic acid to be used as a caustic.

The carbolate of glycerine, as above, should be used in 1 or 2 drop doses.

Antiseptic oil for abscesses, 1 part of acid to 4 of boiled linseed oil.

Antiseptic putty, 6 spoonfuls of the antiseptic oil mixed with common whiting.

Aqueous solution of carbolic acid is 1 part of acid to 40 of water (1 ounce of acid to a quart of hot water well agitated and filtered).

Sick-rooms, to disinfect: place a portion of the dissolved acid in a porcelain dish, and float it in a larger vessel of hot water.

Disinfecting purposes generally: 1 pound of *crystals* to 6 gallons of water. *Fluid*, 1 part to 80 of water. *Powder*, 1 ounce of crystals with 4 pounds of slaked lime.

For drains: take 1 pound of the fluid carbolic acid to 5 gallons of warm water.

Toothache is often cured with 1 drop of carbolate of glycerine; and diarrhœa arrested in half an hour with 2 drops.

In all cases of parasitic life it is advisable to commence with very dilute carbolate of glycerine.

Art. 139.—*The Physiological Action and Therapeutical Uses of the "Acidum Phosphoricum Dilutum."*

By J. B. Andrews, M.D.

(*American Journal of Insanity*, October, 1869.)

Dr. Judson B. Andrews, of the New York State Lunatic Asylum, gives the result of a large experience with the acid. After a brief discussion of the abnormal excretion of phosphates by the urine following mental exertion carried to the degree of fatigue, he speaks of the rational treatment to be adopted, viz.:—

"To repair the waste which the nervous system has suffered, and again bring the secretions to a normal standard. To do this we have the means pointed out in the ingestion of food rich in nitrogenous elements, of substances capable of being converted into phosphoric acid, or of the acid itself. The former of these methods has always been resorted to by practitioners; the latter has attracted little notice.

"To demonstrate the physiological action of the remedy, pulse traces are presented taken by the sphygmograph, after the ingestion of the acid. The amount of acid taken varied from one to three drachms, and the traces were made at intervals of from fifteen minutes to one hour.

"Within the first interval there is an appreciable increase in the force of the pulsations, though there is little change in the number during the whole time of experimentation. The increase is most marked after the lapse of from one to two hours, and it is not till after several hours that the pulse returns to its normal condition. The first experiments I made upon myself, beginning with twenty drops, and continuing the use of the remedy in increased doses till the amount of four drachms was reached. The sensations experienced on taking from forty drops to three drachms were those of moderate alcoholic stimulation. There was slight pain through the frontal region, and a buoyancy and lightness of feeling rather agreeable. When a larger dose was taken, there was a feeling of drowsiness, an inclination to lie down, and an unwillingness to undertake mental labour. This continued for some hours. From these experiments, we may conclude that this remedy is a stimulant general in its character, but with a special tendency to the nervous system.*

"It also exercises a marked control over the vaso-motor system, as will be shown further on. We present some pulse-traces from patients who have been for some time continuously upon the use of the remedy. They

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* The following extract is from the *Dictionnaire des Sciences Médicales*:—"The primary influence of phosphorus is exercised upon the nervous system, of which it increases the sensibility; from that it reacts upon the entire economy, and particularly on the circulatory system; the pulse is developed, heat augmented, the strength is increased."

are taken at random from a large number. In them the change in the tone of the circulation may be noted. Additional force is manifest in the heart's action in all cases where the traces were taken, and in others the same fact was evidenced by the general appearance. From our experience, we think it properly placed in the category of nerve-tonics."

After describing the dementia which follows outbreaks of acute mania, he remarks:—

"This is a period of nervous exhaustion, of reaction from the increased mental and physical activity which marked the previous state of the disease. At this time tone and vigour must be supplied to the prostrated system, and, in the accomplishment of this, phosphoric acid is of material service. Nature has made provision for the repair, in the generally unimpaired, and often greatly increased vigour of the digestive function, and it may be effectively assisted in this process of restoration by the employment of this acid, as a nerve nutriment. The traces marked number one of the pathological series, are those of a case to which this description will apply. Since being placed on the acid the change in the character of the circulation is strikingly apparent, and the improvement in the appearance and mental condition of the patient very marked. The congestion of the extremities and lips has given place to a more natural colour, and the countenance wears the expression of a greater degree of mental vigour and activity. From this point to a full recovery, the steps are usually sure, and often rapid.

"Cases are sometimes under treatment at the asylum, and more frequently in private practice, especially from among literary, professional, or business men, which are characterized by loss of mental power from excessive brain activity.

"The patient is languid, unable to perform mental labour with the usual facility, is nervous, at times fearful, timid, and agitated; the memory is weakened, and permanent impairment seriously threatened. Examination reveals no organic lesion, but the symptoms are such as justly occasion alarm. Such cases have been improperly called by some recent writers, cases of cerebral paresis, a term too strong in its import, but expressive of the great danger which impends. For the recovery of these cases, relaxation from business and labour, and the use of the phosphoric acid, combined with some suitable tonic, generally suffices.

"In cases where mental effort has been protracted till a sense of weariness renders its continuance difficult, a dose of the acid, from its stimulant effect, relieves fatigue, and seems to invigorate the mental powers, and prepare the mind for renewed exertion.* In the night-sweats attending consumption, and other exhausting diseases, this acid is em-

*. "A professor in one of our medical schools in a letter to Dr. Gray recently remarked:—'Wonderful thing that phosphoric acid, and well named by me psychological lemonade. My lunch at noon (we dine at six) consists of rich cheese, bread, and a glass of phosphoric acid lemonade; and on that I have worked eight and nine hours a day, with my pen, for the past seven weeks in this hot weather, without headache or any depression. I never take over fifteen drops, and only once a day, and when fatigued. It is wonderful how quick it climbs into the anterior lobes, scatters capillary congestion, and satisfies the hungry tissue with its own pabulum.'"

ployed with benefit, and has some advantages over the aromatic sulphuric acid, so generally used. It is much more agreeable to the taste, more likely to be tolerated, and does not constipate the bowels. The anti-scorbutic power of this acid is well settled.

"Observation here confirms the views of Neligan and others, that this substance exerts no direct influence on the generative function. It has thus been employed on theoretic grounds; but any favourable influence it has exerted has probably been owing to its general tonic effect. We have used it extensively, and in cases where this function was abnormally excited; and in no instance has its administration been suspended from this cause, or has any inconvenience resulted from its use.

"In the administration of this remedy, one general principle should be kept in mind—viz., not to exhibit it in cases of congestion of the brain, or in those in which there is an inflammatory action, either in the nerve substance or the meninges, as its stimulant effect might prove an aggravation to existing disease. In no case in which it has been given, has it disturbed digestion or proved an irritant to the stomach, even when its administration has been prolonged."

Art. 140.—*Mineral Waters as Therapeutic Agents.*

By Hanbury Smith, M.D.

(*The Medical Record*, November 1, 1869.)

At a meeting of the New York Academy of Medicine, held Sept. 16th, 1869, Dr. Hanbury Smith read a paper on mineral waters as therapeutic agents. After defining mineral waters as "more or less dilute aqueous solutions, flowing from natural springs, or reached by excavation or boring, and possessed of undeniable medicinal powers," he directed attention to the important part played by the temperature and volume of the solvent water, not forgetting the therapeutic value of the only important gaseous impregnations—carbonic acid and sulphuretted hydrogen. From want of time to treat of them, the so-called alum, bitter, and ferruginous waters were passed over, and might perhaps with propriety be regarded as convenient and varied forms of astringents, laxatives, and tonics, forming a transition series between ordinary medicines and the mineral waters proper. The minerals present in these were next described, and it was shown that all the important ones are exactly those "either forming integral parts of our bodies, or whose presence is absolutely necessary to the accomplishment of the vital processes," certainly a most remarkable coincidence.

Dr. Smith then considered the *chlor-sodic* or common-salt waters, always of complex character, each containing from 10 to 15 different ingredients. All these waters are tonic and stimulant, and in larger doses aperient. "They give activity to the cutaneous, intestinal, and urinary functions, developing appetite, and demanding a substantial diet during their use. Most remarkably do they stimulate the abdominal circulation, provoking hemorrhoidal and menstrual discharges—sometimes to excess. They are also powerfully alterative."

The *sulph-sodic* or Glauber-salt waters are much less common than

the chlor-sodic; and even in the strongest, the proportion of the naming ingredient is small compared to that of the common salt in the other. Glauber-salt, formerly much used as a purgative, extracts a much larger amount of water from the blood than the chloride does, and is mainly discharged with the fæces, but little in the urine. It is commonly accompanied by carbonate of soda, with much free carbonic acid, iron, chloride of sodium, &c., the two latter counteracting the tendency to debilitate by depletion.

During the employment of these waters, the urine is increased in quantity and rendered alkaline, the appetite improves, digestion is promoted, and the blood depurated and renewed with healthy materials. The weaker waters, and an allied class, where sulphate of lime replaces the sodic salt, are sedative, alterative, and anti-spasmodic.

The *alkaline sodic waters*, rich in carbonate of soda, are well represented by the so popular Vichy. In addition to the soda are found small proportions of the carbonate of potassa, magnesia, and lime, sulphate and phosphate of soda, and chloride of sodium.

"Rendering the blood more alkaline, doubtless more fluid, and thereby enabling it to circulate with greater ease, the two plastic elements most concerned in chronic engorgements and tumefactions—albumen and fibrin—we may conceive to feel the liquefying influence."

Alkaline chlor-sodic waters, like those of Ems, more feebly mineralized than Vichy and water similar to that, are particularly adapted to the treatment of disorders depending on catarrhal antecedents, neuralgic and spasmodic cases, and such, as requiring alkaline treatment, are accompanied with anæmia.

Sulphur waters are divided into sodic and calcic. The former, quite frequently devoid of the smell of free sulphuretted hydrogen at the source, are more powerfully remedial than the mal-odorous calcic waters, quite contrary to popular notions on the subject. Cutaneous, rheumatic neuralgia, and catarrhal disorders are those most commonly treated by sulphur waters, though these require more care in their employment than any others, being dangerously stimulant.

Dr. Smith remarked that it is not to be forgotten that however arranged, all classes of mineral waters interlace in every possible way, the one passing into the other by insensible degrees.

The analysis of any water does not tell us, with any approach to accuracy, what is likely to be its specific action. Reliable empiric observation is the main source of all our information on the subject.

While active hydro-mineral treatment is contra-indicated in acute disorders, heart affections, cancer, and malignant organic diseases, &c., it may yet be employed in "a carefully graduated and discriminating manner to ameliorate symptoms supervening upon the principal disease, or even more or less intimately connected with it."

The constitutional tendency to a given disease, and the diathesis, where the disease is present, but in abeyance, are the great fields for the internal use of mineral waters. As might be expected, however, of such alterative medicines, the effects are sometimes developed with extreme slowness, sometimes exacerbating, or even causing the chronic disease to put on an acute form. If the disease is recurrent, the rule is to commence treatment at the middle period of the best health.

After a full elucidation of the above, and other practical points, the treatment of chronic, and especially the diathesic diseases, received as much attention as the occasion would admit of.

In answer to a question concerning the properties of the Missisquoi water, Dr. Smith replied that the only peculiarity he had been able to discover, was its remarkable purity, and that such had been the experience of other chemists, all having failed to detect in this water any earthy or mineral salts. He then expressed a wish that any of the gentlemen present would report cases of diseases that have, under their observation, been relieved or cured by the use of mineral waters.

Art. 141.—*On the Internal Use of Carbolic Acid for Syphilis.*

By Dr. M. Köhn.

(*Archiv für Dermatologie und Syphilis*, 1-2, 1869 ; *Schmidt's Jahrbücher*, No. 10, 1869.)

Dr. Köhn gives the results of trials with carbolic acid made in Hebra's wards within one year. The subjects were ten males and fourteen females, the cases selected being those in whom there were presented, either with or without co-existing idiopathic (local) sclerosis, syphilitic maculæ, small or large papulæ, or small pustules upon the skin. Ulcerative forms were excluded. The carbolic acid was generally used in the form of a pill with liquorice as an extract, or powdered. Each pill contained 0·06 grammes of the carbolic acid. At first, from six to nine, and later, from twelve to twenty pills were administered daily. In some few cases as many as sixty pills were administered daily. The acid was likewise administered in solution, but in small quantities; when used in this form, its taste and smell were very offensive to the patients.

From these trials it resulted that the above-mentioned exanthems in the course of from four to seven weeks improved or totally disappeared under the use of carbolic acid. The same report was given as to the treatment of syphilides which had lasted for several months, and of the pustular forms of eruption. Still the good results were not so well marked as to favour the recommendation of carbolic acid for the treatment of syphilis. This assertion is based upon the following facts:—(1) Mercurial medicines and the inunction method act much more rapidly in syphilis; (2) Carbolic acid proves itself to be quite inert against syphilitic osseous affections, pains in the bones and articulations, and nocturnal headache, symptoms which can be removed almost with certainty by mercurials and iodine.

Art. 142.—*On the Employment of Carbolic Acid in Surgery.*

By Dr. Joseph Englisch.

(*Oësterreich Zeitschrift für praktische Heilkunde*, xv. 1869 ; *Schmidt's Jahrbücher*, No. 12, 1869.)

For the purpose of forming a judgment upon the surgical application of carbolic acid, Dr. Englisch carried this into practice during one year and in more than four hundred cases. The application was made strictly according to Lister's directions. Dr. Englisch remarks, that in opening abscesses the incision should never be made too small; but that, according to the size of the abscess, it should vary from one to two inches, and never be less than one inch in extent; the discharge of pus is thus materially facilitated, and less pressure is required.

The author has thought it advisable to give an elaborate statement of his results, as he thinks that the method fulfils so many advantages that its diffusion deserves to be promoted as much as possible.

In discussing, in the first place, the application of Lister's method to the treatment of wounds, the author states that it is attended with many advantages in cases of incised wounds; the edges of the incision do not swell, and seem, in consequence of the absence of inflammatory reaction, to be less further apart; the secretion of pus also is much lessened by this dressing. When a layer of healthy granulations has been formed, the carbolic acid application may be replaced by some other more suitable dressing, since in cases of this kind cicatrization might be retarded by the irritating action of the acid. The author substitutes either a solution of caustic potash or a lotion containing camphor and mucilage. The scars of incised wounds treated in this manner are very narrow and not closely adherent to the tissues beneath. A case is given in illustration of a wound of the back of the hand with division of the extensor tendon of the ring finger ; cicatrization resulted after ten days, and the injured tendon was subsequently observed to play freely.

Lister's dressing also proved very beneficial in cases of contused wounds; with extensive hæmorrhage, the author states, the surgeon need not after the above-mentioned results hesitate to extend the incision. The infiltration of the surrounding tissues in the author's cases was always very slight, and the resulting cicatrix small and moveable. A case is reported of severe contused wound in consequence of the patient having been run over.

The most striking advantages from the use of this dressing were shown in cases of compound fracture, although the injured extremity was not saved in all. With a small skin wound the fracture heals as if it had been a simple one. When the position of the fragments is such that considerable irritation of the soft parts is produced, the progress of the case is much slower, although suppuration is less severe, exfoliation of portions of bone of much less seldom occurrence, and consequently, the loss of the patient's strength not so great as in cases where other methods of dressing were practised. The following are condensed reports of two cases given by the author:—

1. A youth, fifteen years of age, received in a fall an oblique fracture of the right tibia; corresponding to the anterior edge of the broken bone was a straight wound three inches in length, from the lower extremity of which projected a sharp piece of bone. Before the limb could be put into a good position about three-quarters of an inch of the projecting bone had to be removed. The carbolic acid dressing was then applied, and although on the following days severe febrile disturbance took place, there was but very little inflammatory reaction about the seat of injury. Some pericystitis afterwards came on. On the fourteenth day the bone was covered by granulations, and at the end of the same week the wound was quite healed.

2. A driver was run over by his own heavily laden waggon and received a severe contusion of the left leg which when applied to the side of the right limb was found to be shortened to the extent of two inches. On the outer side of the injured limb was a widely gaping wound about five inches in length, which commenced near the outer side of the ankle. There was a double fracture of the tibia and fibula, and the middle fragment of the tibia was placed obliquely, the point of the upper fragment being denuded of periosteum. The limb was then placed in position and Lister's dressing applied; in the course of a few days a gangrenous patch of the size of a thaler-piece was formed to the integument, in consequence of the pressure of the extremity of the upper fragments of the tibia. In spite of this however, although it was slow, cure resulted without exfoliation of bone. The process of healing lasted for five months; the shortening of the limb amounted to one and a quarter inch. In this case amputation was especially indicated.

Good results were frequently obtained in cases of almost complete separation of the fingers. It may be naturally supposed that all the extremities thus injured could not be preserved; where the nutrition of the limb has been considerably impaired, it is self-evident that the carbolic acid application will not preserve the injured part.

With acute and chronic inflammations in individuals of a healthy constitution carbolic acid, as a dressing, has great advantages, whilst with inflammations associated with dyscrasiæ this agent is capable of doing harm.

The employment of carbolic acid was very beneficial in the local treatment of inflammation of the connective tissue of the axilla, in inflammation of the bursæ mucosæ of the olecranon and patella, with dangerous subaponeurotic inflammation of the connective tissue in the palm of the hand, and in intermuscular phlegmon of the calf; cases in which amputation has hitherto been thought necessary, and which often resulted in pyæmia, or in a partial recovery with the preservation of a useless and stiff limb. The impairment of function is diminished by the carbolic acid treatment, in consequence of the slight cicatrization which is produced by this method.

Lister's plan of dressing also proved very efficacious in cases of lesion of the subperitoneal connective tissue. Three cases, two in women and one in a man, were observed by Dr. Englisch, in which suppuration of the cellular tissue had been set up in the iliac fossa, in consequence of lymphangeoitis extending from the thigh. One case, after an opening had been made by caustic potash, was treated locally by fomentations,

the other two by carbolic acid dressings. In the latter cases a remarkable diminution of the discharge of pus and rapid healing followed the method of treatment.

In suppuration in the perineum and about the anus the application of carbolic acid, although very difficult, is still strikingly beneficial. No good result, however, followed its employment in a case of urinary infiltration resulting from ulceration and rupture of the urethra.

With glandular inflammations, and also inflammation of the substance of the glands generally dependent upon tuberculosis and scrofulosis, the results from the employment of carbolic acid were not good. In combinations of inflammation of the gland with that of the surrounding cellular tissue the results were mixed; with inflammation of the cellular tissue alone they were favourable.

In cases of fistulous passages under the skin not in connexion with diseased bone, injections of carbolic acid and the subsequent application of the acid paste were rapidly followed by recovery.

The results of the treatment proved to be more favourable in periostitis than in disease of the bone substance and the medulla. Dr. Englisch derived great benefit from the application of carbolic acid in cases of traumatic and rheumatic periostitis of the tibia and fibula. In one case the whole of the fibula was enclosed in a large abscess, and yet a cure was rapidly effected. Two successful cases are also reported of metastatic periostitis in puerperal women.

The carbolic acid dressings were of uncertain utility in cases of the so-called cold abscess dependent upon dyscratic disease of bone. Dr. Englisch acknowledges, however, that he would never hesitate to open abscesses which have originated from osseous caries, and which generally give no good result, since he has frequently had an opportunity of observing that after the abscess has been opened the suppuration has never attained to such a height under the application of carbolic acid, as in other plans of treatment.

With diseases of the joints the results varied very much. With small joints, as those of the fingers and toes, necrosis was repeatedly followed, under the influence of carbolic acid, by ankylosis, or healing with perfect movement often after a long continuance of the disease.

With large joints the results were less certain. Dr. Englisch has observed some striking cases of cure, but these referred only to pure traumatic synovitis. Where there is caries or necrosis in the joint, the result of the treatment consists only in a diminution of the secretion and of the fever.

The results of the carbolic treatment in operation wounds were the more favourable the less the bones were involved. Out of seven cases of herniotomy treated by this method, four were healed in from four to five weeks; two cases terminated unfavourably, as peritonitis had extended too far before the operation. The seventh case was still under treatment, but no inflammatory symptoms had been manifested. Lister's treatment was very efficacious in the radical cure of hydrocele by incision, and also after the extirpation of new growths; in these cases, however, it is to be remarked that the carbolic acid should be changed for some other dressing as soon as prominent and luxuriant granulations have been produced.

In operation wounds, in which small-sized bones were involved, the results of the dressing were very good.

Dr. Englisch saw only one case of pyæmia under the carbolic acid treatment. Erysipelas was also of rare occurrence, which, however, might have been partially due to the careful removal of pus.

The chief disadvantage of the carbolic acid is its rapid absorption and secretion by the kidneys. These results are not of general occurrence, as in some cases of large wounds treated by carbolic acid, no discoloration of the urine has been observed. It is evident, however, that the passage of carbolic acid through the kidneys must cause great irritation, since in connexion with dark-coloured urine albumen is often found in this secretion.

In Dr. Englisch's opinion carbolic acid as a dressing is to be considered as an important acquisition to surgery, the advantages of which consist in the short period necessary for cure, in the reduction of fever and the amount of secretion, in the slight reaction in the surrounding parts, and in the short convalescence resulting from the small loss of the circulating fluids.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

ART. 143.—*On the Differences between Inflammation and Pyretic Diseases.*

By Professor BOUILLAUD.

(*The Lancet*, January 28.)

Professor Bouillaud thus sums up his views on the differences between inflammatory and pyretic diseases:—

1. The excess of fibrin in the blood, in the purely inflammatory condition or process, which for a long time was named "inflammatory fever," proceeds from an *abnormal secretion* or *neoplasm* of the internal membrane of the blood apparatus. This neoplasm is similar to the one produced on the surface of an inflamed serous membrane, to the degree or according to the manner designated by Hunter an *adhesive inflammation.*

2. It is a portion of this neoplasm, or of this pseudo-membranous secretion, which deposits on the surface of the coagulum of blood obtained in the cases above stated—neomembrane, to which the name of inflammatory clot has been given, and the chief constituent principle of which is fibrin.

3. Phlegmasia of the internal membrane of the circulatory apparatus, more or less generalized, and belonging to the so-called *adhesive* form, is one of the fundamental conditions of that production of fibrin in excess, and of the pseudo-membrane of the blood in so-called *inflammatory* fever.

ART. 144.—*On Carbuncular Inflammation.*

By THOMAS SMITH, F.R.C.S., Assistant-Surgeon to St. Bartholomew's, Hospital.

(*The Lancet*, January 22.)

At a meeting of the Clinical Society of London, held Jan. 14th, Mr. Thomas Smith communicated the particulars of three cases of carbuncular inflammation which occurred on the face. He remarked that this disease bore much the same relationship to common carbuncle as scarlatina maligna does to scarlatina simplex. He referred to the different

names that the disease had received, and noticed Mr. Ludlow's cases, and stated that, though he had seen the cases related by Mr. Ludlow and others occurring since, he was unable to state any signs by which the malignant cases might be recognised in an early stage of the disease. The ordinary progress of facial carbuncle was described, and also that of malignant pustule; the characteristic signs of the latter were stated to be its origin from a local virus, the absence of severe pain or increased heat, the dryness of the slough, the absence of pus in all stages of the malady, and the fact that the death of the tissues proceeded from the skin towards the deeper parts. In discussing the cause of the fatality of facial carbuncle, attention was drawn to the susceptibility of this locality to erysipelas and œdema, to the peculiarities of the venous circulation, and to the sudden deaths that had occurred from the injection of nævi on the face with tincture of iron. As regards treatment, the author confessed that we possess no means of arresting the fatal effects of blood-poisoning when it has once taken place, and that treatment could only be directed to prevent the occurrence of pyæmia, either by the destruction of the disease in its earliest stage, by caustics or by the administration of internal medicines. The former plan he rejected as unjustifiable from its severity, in our ignorance of the characteristics of malignant carbuncle in an early stage. He spoke of quinine in large doses as having proved useful in the hands of Mr. Paget in one case, and he suggested that in all cases of facial carbuncles sulphite of magnesia should be given from the very first.

Mr. Gant made some observations on cancer in this region as distinguished from malignant pustule, remarking that the latter was the direct result of contagion, and should not be confounded with carbuncular inflammation.

Mr. Heath advocated incisions in cases similar to those related by Mr. Smith, and cited successful instances of this mode of treatment.

Dr. Greenhow said Mr. Smith's paper was important, because carbuncular inflammations are often confounded with malignant pustule, that their etiology is different, and that the latter disease is much more common on the Continent than in England.

Mr. John Croft gathered that, in the paper read, a distinction was made between two varieties of the disease. He had never seen a fatal case of facial carbuncle, and regretted that in those related by Mr. Smith no post-mortem examination was made. There appeared to be no reason for making incisions, as no pus existed; and, according to his own experience, sulphite of soda was quite inert.

Mr. Hulke asked if carbolic acid had been used topically for carbuncle, and believed it to be a most useful application.

The President, in remarking upon the noteworthy features of these cases, said that, according to his own observations, the disease was comparatively modern; that the first case seen at St. Bartholomew's Hospital was admitted about twenty years ago, and was then called acute impetigo of the lower lip. To his surprise, the man died, and six months later another case was admitted, which also ended fatally. He had attended from fifteen to eighteen cases, and all but one had died. The last case described by Mr. Smith was neither malignant pustule nor carbuncle; and he was unable to say why some were rapidly fatal, and

others recovered. Inflammation of the lymphatic glands was a marked and constant feature, and it should be an object to discover why this fatal form of disease affects exclusively the face and lips. Young persons are specially obnoxious to this disease, more than half of the cases cited above having occurred in subjects of from sixteen to twenty-two years of age. According to experiences gleaned, incisions produced no good effect, and all died from acute pyæmia.

Mr. Nunn remarked, that the pyæmic condition sometimes existed before the carbuncular state was fairly established.

Dr. C. T. Williams inquired if in these cases any sugar was found in the urine.

Mr. Smith closed the discussion by saying that the disease was not rare, as Mr. Croft suggested; that incisions do not succeed; that post-mortem examinations are gloomily monotonous, and throw no new light on the subject; that the urine in the cases recorded was not albuminous, but was not examined for sugar; and that, according to his experience, it is impossible in the early stages of the disease, to pronounce even an approximatively accurate prognosis.

Art. 145.—*Case of Pyæmia, with Singular Eruptive Symptoms.*

Under the care of Dr. Anstie.

(*The Lancet*, January 22.)

There are two points of great interest about the following case. The occurrence of pyæmia without an assignable external cause is always an interesting thing; and in this instance, neither in life nor at the post-mortem examination could any such cause be detected. From the very plain evidences of severe blood-poisoning which the case presents, one is constrained to think of possible contamination of the system by foulness of the atmosphere in which the girl had been living; and in respect to this it is worthy of note that she was residing in some servants' offices at a club which have been unfavourably distinguished by the number of cases of disease more or less dependent upon miasmatic influences which have occurred for some years past among their inmates. Another point of interest is the peculiar eruption; it presented at one stage, no small superficial resemblance to small-pox, but this rapidly disappeared, and the bullæ which were developed along with the pustules in many cases contained reddish serum, and were of considerable size. Dr. Anstie believes such a complication of pyæmic poisoning to be very rare. Finally, this case repeats the warning given by so many others of the insidious manner in which pyæmia developes itself, and the especial frequency with which its early symptoms may be mistaken for those of rheumatism.

Emma W——, aged twenty, admitted into the Westminster Hospital Sept. 10th; scullery-maid at a club. She complained on admission of pain in her joints, and said she had had "rheumatism" for several days. Temperature 101°. Left eyelid a good deal ecchymosed. She was

treated at first for rheumatism, being put on beef-tea, milk, &c., and ordered ten grains of acetate of potash and thirty grains of bicarbonate of potash every four hours, and ten grains of Dover's powder at night. She was a large, stout, healthy-looking girl. Good sleep was obtained that night, and in the morning no visible change could be observed.

Sept. 12th.—To-day she is not quite so well. Temperature 102°. On the right side of the face there are a couple of red spots.

13th.—All over the face and trunk are a number of bullæ and pustules, in various stages. The patient slept badly last night, and had one attack of rigors. Temperature 104°; sickly odour about her. Tongue foul, and coated white. Tenderness of joints; left knee much swollen. On the dorsum of the right hand there is an inflammatory blush. There is a similar one over the back of the left ankle. Motions passed involuntarily; they are extremely yellow, and very offensive. At this stage Dr. Anstie ordered eight ounces of sherry per diem, and two-grain doses of quinine every four hours; but no good effect was produced, and the patient passed into high delirium. This continued all night. There was much diarrhœa, and a very offensive smell about the patient.

On the following morning, the 14th, the pustules and bullæ were still more numerous, the tongue was dry and brown, and the lips and teeth coated with sordes. Death occurred at 5 P.M.

Post-mortem examination.—Heart normal; both lungs studded at the base with patches of lobular pneumonia, in various stages. These were about the size of a sixpence. Most of them were in the first or second stage, but one or two were soft, broken down, and whitish-grey. Stomach healthy; kidneys congested and enlarged, each weighing seven ounces. Spleen small and congested. The left knee-joint contained a large quantity of thin, yellow pus; and an incision made into the inflamed dorsum of the right hand also gave exit to a quantity of pus.

ART. 146.—*On Recurrent Hæmorrhage.*

By JAMES PAGET, F.R.S., D.C.L.

(*Medical Press and Circular*, February 23.)

Mr. Paget, after mentioning that recurrent hæmorrhage is essentially due to reaction, and comes on more rapidly in strong persons after amputation than in the weak, deprecates the plan of giving much stimulation to patients after operation, as likely to be followed by bleeding. In cases of morbid or cancerous growths recurrent hæmorrhage is peculiarly apt to occur, or after some inflammation or acute pain in the part. In such cases it is advisable after amputation to sling the limb, and leave the vessels exposed to the air. If not sufficient, ice should be applied, and in desperate cases compression of the main artery by tourniquet, or opening up of the flaps and tying the vessels again. The main vessel should not be bled until it is ascertained whether, if that were done, bleeding would be likely to cease or not.

Art. 147.—*On the Employment of Digital Compression and Flexion in the Treatment of Aneurisms.*

By Dr. Fischer.

(*Vierteljahrschrift für praktische Heilkunde*, Bande cii. ciii. civ. 1869; *Archives Générales de Médecine*, Janvier, 1870.)

Digital Compression.—According to Fischer, direct compression was employed for the purpose of arresting hæmorrhage by Galen, Guy de Chauliac, Paré, and others. Indirect compression also was recommended by Wiseman, Paré, Louis, and other authors. Morel, in 1682, was the first to mention direct compression upon an aneurismal sac. Indirect compression, as employed at the present day, was especially studied at the end of the eighteenth century by French surgeons. This method afterwards fell for some time into neglect, although one may find some few observations scattered here and there in English and American publications.

In 1856, Giovanni Flinich, a pupil of Vanzetti, published in his inaugural thesis the principles on which this method rests, and gave it the preference over all others generally employed. Vanzetti had the honour of introducing indirect compression into daily practice, and of laying down its indications and counter-indications.

The statistics of Dr. Fischer are based upon 188 cases, 72 of which occurred in France. The authorities who discussed this subject had collected the following numbers of cases :—

1856. Broca	13
1857. Verneuil	17
1858. Petiteau	26
1859. Abbadie	34
1860. Gaultron de la Bâte	40
1865. Barlemont	42
1868. Fischer	188

The aneurisms treated in this manner were seated upon the following arteries :—iliac, 3 cases; inguinal, 7 cases; femoral, 8 cases; popliteal, 90 cases; tibio-peroneal trunk, 1 case; anterior tibial, 1 case; posterior tibial, 1 case; external plantar, 1 case; subclavian, 1 case; axillary, 4 cases; brachial, 32 cases; ulnar, 1 case; radial, 7 cases; superficial palmar arch, 5 cases; carotid, 4 cases; temporal, 2 cases; ophthalmic, 6 cases; supra-orbital, 1 case; inferior coronary, 1 case.

These numbers comprise 124 spontaneous and 64 traumatic aneurisms; 13 were diffuse and 16 varicose.

The duration of the aneurism was noted in 59 cases, and in 23 instances the aneurisms had existed from one to eight weeks.

The ages of the patients in one-third of the cases were between thirty and forty years; in one-fourth between forty and fifty years.

Out of the 188 cases collected by Fischer there were 121 recoveries; 104 by digital compression alone, and 17 with compression aided by other plans of treatment. From the 67 instances of failure are to be removed 33 cases which had resisted instrumental compression, and

which ought not to have been treated by compression. In short, there remain 138 cases with 104 cures by digital compression alone, which makes 75·3 cases of success to 100 patients. With these 104 cases of cure, other methods of treatment—chiefly instrumental compression—had been employed without success. In the cases where digital compression had been employed as the sole method of treatment from the commencement, cure was perfected in a space of time which varied from six to nine hours.

The chief causes of failure were: a too feeble plasticity of the blood, diffusion of the tumour, pain at the seat of the aneurism, or at the seat of compression, the impossibility of completely suppressing the pulsations at the level of the compressed spot, complications (rupture, inflammation, phlegmon of the sac), fatigue of assistants, &c.

Instrumental compression followed by digital compression, failed in 19 instances.

The fatal cases were 19 in number; one patient alone succumbed to the employment of digital compression to the exclusion of other means. This was a man, seventy-one years of age, suffering from palpitations and affected with a popliteal aneurism, the rupture of which was feared. At the end of twenty-four hours of digital compression, the tumour became solid; then there was limited gangrene, from which the patient died at the end of the second month.

In 3 cases death followed the combined employment of digital and instrumental compression; in 10 cases the patients succumbed after consecutive deligation, in 3 to amputation, and in 2 to opening of the sac.

This method, however, may be attended by inconvenient disturbances. One has sometimes observed localized paralysis, stiffness of joints, and, when the patients have been about too soon, relapses.

The principal means used for aiding digital compression were: morphia, digitalis, veratrum, barium, perchloride of iron, bleeding, diet, chloroform, &c.

Digital compression has the following advantages over instrumental compression and deligation: it is more simple and can be more readily applied; it is a surer and more precise method, and occasions less pain than others. Moreover, digital compression supplies a greater number of cures and fewer relapses. Employed alone it has never caused death.

If it be compared with instrumental compression it will be seen that a cure is produced in three days, whilst with the latter plan of treatment an average of fourteen days is generally required to produce a successful result. The proportion of cures is 75·3 in 100 cases with digital compression, and 70·3 in 100 with instrumental compression. The former method offers great advantages when the surgeon is obliged to have recourse to the ligature; the proportion of success is as 4 to 5.

In conclusion, this method ought to be preferred to all others, except flexion where it can be employed.

Digital compression has also been employed in several instances with success for the treatment of hæmorrhages, neuralgia, inflammation, malignant pustule, and elephantiasis.

Flexion.—The statistics of Dr. Fischer comprise 57 cases of aneurisms, 6 of which were traumatic and 1 arterio-venous. Of these cases

7 were treated at the same time by digital compression. 42 of these cases occurred in England, 7 in America, 4 in Germany, 3 in France 1 in Switzerland. The tumour was seated upon the external iliac artery in 2 cases, upon the femoral in 1, upon the popliteal in 48, upon th brachial in 3, upon the radial in 2, and upon the palmar arch in 1. One-half of these cases occurred with patients between thirty and forty years of age.

Out of 57 aneurisms there were 28 cures—20 by flexion alone (4 of which had resisted instrumental compression), 8 with the aid of other methods. It failed in 29 instances. After withdrawing cases the failure of which cannot be laid to the account of flexion, there remain 37 aneurisms, 18 of which were cured—49 per cent.

In the most favourable cases flexion was employed for six and eight hours, and in other cases during four, five, six, ten, fourteen, eighteen, twenty-five, thirty-eight days, and one, two, or three months.

Forcible flexion is more agreeable both for patient and surgeon; it requires no complicated apparatus, and has never caused death.

Art. 148.—*On Torsion.*

By Cooper Forster, F.R.C.S., Assistant Surgeon to Guy's Hospital.

(*The Lancet*, December 25, 1869.)

At a meeting of the Clinical Society of London, held Friday, December 10th, Mr. Cooper Forster read a paper *On Torsion*, and said that, having been selected by the Council of the Society as one of a Committee to report upon the relative advantages of this procedure and acupressure, and no report having been made in consequence of the death of one of the Committee, he felt it right to offer the Society his individual opinion upon the question. Having made some remarks upon the advantages of acupressure, and stated that, though still practised in Aberdeen by Keith and Pirrie, it was but little used in London, the speaker remarked that he had lost two cases from bleeding when the pins were removed, and that these accidents occurred after considerable personal experience in the practice. He considered acupressure valuable, but claimed for torsion precedence over all other modes of arresting hæmorrhage because, it possessed the great advantage of not leaving any extraneous body in the wound. In proof of its efficacy he read several cases of amputation, as having occurred under his own care, in which torsion alone was employed for arresting hæmorrhage. In addition to these amputations, Mr. Forster mentioned that he had excised the elbow-joint once, the knee three times, and the hip four times, during the last few months, besides performing other operations (about forty in number), in all of which torsion of arteries was exclusively employed. He therefore considered that a fair trial had been given to the plan, and that hence he might speak with some confidence as to the results. He confessed to reading with surprise, in Mr. Nunneley's able address to the British Medical Association, remarks to the effect that "he (Mr. Nunneley) could not twist a large artery and rest comfortably in bed, lest the

elastic artery should untwist itself, and the patient bleed until he slept to wake no more." Mr. Forster was convinced that, had Mr. Nunneley perused carefully an account of the manner in which vessels were closed by torsion, the notion of an artery untwisting itself would seem to be an impossibility. Drawings were shown by the speaker representing the two femoral arteries of a double amputation hardened in spirit, and divided sectionally by Mr. Howse; and the fact was particularly emphasized that the twisted part showed no signs of death, though the patient from whom the preparation was taken did not die until thirty-six hours subsequent to the operation. Mr. Forster assured the Society that in no single case recorded, or at any time under his care, had secondary hæmorrhage occurred; and the conclusion at which he had arrived was, that the greater security of torsion arose from the reduplication of the middle and internal coats, thus affording a mechanical impediment to hæmorrhage, which impediment increased day by day. But in acupressure, as he had shown in the 14th volume of *Guy's Hospital Reports*, the clot which formed above the pin was the only safeguard against hæmorrhage. As the removal of the pin a day or two subsequent to the operation was necessary, it must always be a matter of some uncertainty as to whether the clot was sufficiently adherent to afford the necessary security against bleeding. In the practice of torsion a vessel is made secure at the time of twisting—that is, bleeding is arrested with certainty, and there is no chance of its recurrence. But in cases where acupressure or the ligature is employed, there must always be some anxiety on the part of the surgeon as to the removal of the pin in the one case, of the separation of the ligature in the other. Mr. Forster further stated that since February, 1867, he had never used a ligature to restrain bleeding from an artery.

A very excellent preparation of the arteries above referred to was handed round for examination, as also the forceps used by Mr. Forster.

In reply to a question from the President, Mr. Forster said that it was his practice to seize from one-eighth to a quarter of an inch of the artery, and in the case of large vessels to twist it four or five times. Small arteries were usually more difficult to deal with than large, because the surrounding tissues were sometimes included in the grasp of the forceps.

A query from Mr. Croft educed the opinion that it was of little consequence whether the vessels were cut obliquely or at right angles.

Mr. Bryant corroborated the experience of Mr. Forster in every particular; he had not used the ligature for two years. Mr. Poland had applied torsion to six femoral, two brachial, and a great many smaller arteries with entire success. The speaker disagreed with Mr. Humphry as to the mode of twisting, and believes that the external coat should not be twisted off, because it is required for the support of the middle and internal coats. The necessary number of twists must be judged of by the looseness of the external coat, and a jet of blood should be allowed to enter the artery at once to prove the success of the procedure.

Mr. Durham agreed with the last speaker; had practised torsion in the case of four femoral, two brachial, and many smaller arteries, and thought that a pair of forceps with very broad ends were more effective than those commonly used by Mr. Forster.

A visitor related three successful cases in which he had practised torsion, had divided the vessels transversely, and twisted off their ends.

Mr. Maunder asked if union by first intention ever took place, and remarked that this mode of securing vessels is specially commented on in South's *Chelius*, and also by Galen.

Mr. Gascoyen had applied torsion to small vessels, but thinks the ligature a more satisfactory plan. He would put these queries: In what cases does the ligature fail? Is the proportion of recoveries greater with torsion than with ligature? Is not the long exposure of the stump in the former practice objectionable?

Mr. C. Heath inquired if torsion was equally useful whether practised in combination with Lister's carbolic acid dressing or not. He considered the latter entirely neutral as to its results, and that it might therefore be dispensed with.

Mr. Moore had not practised torsion, but was persuaded that acupressure was a preferable proceeding. He gave instances of the failure of torsion in the case of atheromatous arteries, and opined that, when the external coat became cretaceous, and therefore rotten, the practice was inadmissible, as also when the vessels were deeply imbedded in loose tissue.

Mr. Croft admitted the principle, but not the "wholesomeness," of torsion, because it involved more care, labour, and attention, than could possibly be bestowed by students.

Mr. Callender said that, to judge fairly, torsion should be compared with other modes of controlling hæmorrhage, and remarked that small vessels can be easily managed with ordinary spring forceps.

Mr. Arnott observed that the untwisting of the arteries had, in his experience, constituted a difficulty.

Mr. Thomas Smith thought it desirable that Mr. Forster should state very explicitly his mode of procedure; the success in his hands was undoubted, but was not confirmed, in many instances, by the practice of others.

The President said that torsion had been practised at recurring periods over and over again; that (as he was informed) it had been used at Hamburg, to the exclusion of all other modes for controlling hæmorrhage, for fourteen years continuously, and was then given up because the time occupied was very great, and also because the ligature was thought to be more secure. He spoke favourably of acupressure, and remarked that no cases of secondary hæmorrhage had occurred with this method of treatment, as practised by Keith and Pirrie at Aberdeen; that, according to his own belief, the ligature is not the best mode, except on the score of safety; and that the important question to determine is, which mode of procedure results in the largest number of recoveries, and of immediate union?

Mr. Forster, in reply, said that he wished to compare torsion with acupressure rather than with the ligature. There was little doubt, however, that all these plans were admirable, as immediate agents, but that we should look to the future. He averred that secondary hæmorrhage sometimes ensued both after the application of the ligature and acupressure, but that in torsion it could not occur; that in the very

last case on which he operated the only parts of the stump that did not slough where those around the artery, which latter was atheromatous and could not have been secured by ligature. He thought Mr. Croft's objection entirely untenable, and recommended Mr. Gascoyen to live and learn.

Mr. Callender closed a very interesting discussion by remarking that, out of more than sixty capital operations performed at St. Bartholomew's Hospital during the year 1869, no case of secondary hæmorrhage had occurred after the application of ligatures.

Art. 149.—*Clinical Lecture on Periostitis, &c.*

By James Paget, F.R.S., D.C.L.

(*British Medical Journal*, January 22.)

The following is an abstract of a clinical lecture given by Mr. Paget:—

The principal subject of the lecture was *Periostitis*, and especially the rare form of it in which the disease goes on to necrosis, without the implication of any tissues external to the bone, without the formation of pus, and consequently without sinuses. The sequestrum in such cases is found in a cavity whose walls are formed of soft granulations bounded by the immensely thickened periosteum, all the superficial structures being quite healthy. The results are an enlargement of the bone, generally involving the *whole circumference of the shaft;* constant pain, which is often worse at night; and tenderness on pressure.

We have to distinguish such a case from, 1st, *cancer*, in which, however, the increase in size is usually much more rapid than in these cases of masked necrosis, while the pain is neither so constant, nor is it liable to special nocturnal exacerbation; while lastly, the tumour in cancerous disease does not uniformly surround the shaft of the bone. 2. In certain low, somewhat flat, bony, or cartilaginous *outgrowths* from the surfaces of long bones, especially the femur, the growth occurs from only one part of the circumference of the shaft, and it often becomes complicated by the formation of a bursa over its surface, while it is liable to attacks of periostitis, accompanied by the usual signs of that disease.

The patient whose case illustrated these remarks was a servant girl who had been treated for pain in the knee for some weeks before admission. She presented, on admission, a considerable uniform enlargement of the shaft of the femur, tender and painful. She stated that she had been in the habit of breaking sticks across the thigh—a circumstance which Mr. Paget thought of some interest in the absence of other ascertainable causes of the disease. She was kept under observation for about three months, during which time blisters, complete rest, and gradually increasing doses of iodide of potassium, gave her only partial and temporary relief from pain. There was not much increase in the size of the swelling during this time.

The pain remaining, and there being no positive signs of malignancy, Mr. Paget cut down on the enlarged femur, and removed from the

swelling a piece of dead bone about an inch and a half in length. The periosteum was much thickened, and the cavity containing the sequestrum was lined by soft granulations.

Two other cases were alluded to. In one, the humerus enlarged so rapidly as to simulate cancer; but an incision showed cavities containing some inspissated pus and pieces of dead bone; there were no sinuses. The other specimen consists of the femur and tibia of a man whose history is unknown. There is abundance of new bone surrounding a necrosed portion of the shaft in each bone; but there are no sinuses.

In speaking of the treatment of periostitis, Mr. Paget advocated the use of *repeated blisters*, especially in the "relapsing periostitis," which often occurs in the neighbourhood of united fractures particularly (in old people), or at the seat of former necrosis. Iodide of potassium influences chiefly periosteal inflammations—not inflammations of the bone-substance; and Mr. Paget thinks that the different forms of periostitis are influenced by the iodide in something like the following order: 1. Syphilitic; 2. Chronic gouty periostitis; 3. Scrofulous periostitis; 4. That form associated with chronic rheumatic arthritis, over which iodide of potassium has no power at all.

Sloughing in cases of Damage to the Spinal Cord.—Mr. Paget made some remarks on this subject in connexion with a patient who has been in hospital for several months, suffering from partial paralysis after severe concussion of the spine. The man received an injury to the spinal cord three years ago; he recovered from the partial paralysis so far as to be able to resume his work, until he met with a second accident, which caused severe concussion and very considerable impairment of sensation and motion below the original seat of injury. Soon after the second injury, sloughing of the skin of one foot occurred. Mr. Paget considered that this case well illustrates the facts that simple *loss* of nerve-power is followed only by *wasting* of the paralysed parts; but that if, in addition to loss, there is *disturbance* of nerve-force, we then find disturbances of nutrition quickly following the injury, such as extensive bed-sores and sloughing of integument on the feet. After the first injury, this man's spinal cord was simply weakened, probably; after the second accident it was irritated as well, and accordingly portions of his skin quickly died. Mr. Paget remarked also, that if sloughing does take place from irritation of the cord, it always comes on soon after the injury or disease; if we can prevent bed-sores during the first week or two the patient is nearly safe.

Art. 150.—*On Compound Fractures.*

By Sampson Gamgee, F.R.C.S.

(*Medical Press and Circular*, December 22, 1869.)

At a meeting of the Medical Society of London, held December 6th, Mr. Sampson Gamgee read a paper on compound fractures.

He preferred to our own the French division into simple and complicated fractures, the latter including swelling and wound. A fracture

with a penetrating wound may be and often is a less important injury than what is commonly called a simple fracture, though accompanied with much bruising of the soft parts, and consequent swelling. In all cases, if the limb is to be saved, the author recommends adherence to the same principle of treatment, immediate reduction, immobility and compression; soft pasteboard splints are the agents chiefly relied on, but to be efficient they must cover indeed the joint above as well as below the seat of fracture—a principle firmly inculcated by Percival Pitt, who was erroneously held to be the advocate of position against splints. On the great value of pasteboard splints, the sound practical teaching of Jean Louis Petit was contrasted with the fanciful objection of Malgaigne. The fallacy of John Bell's objection, and the use of compressing bandages in fractures were fully exposed, and a number of cases were adduced to illustrate the author's practice; amongst them one of compound fracture of the ankle joint, in which complete recovery followed excision of the astragalus and the application of a compressing pasteboard apparatus, only opened for the dressing of the wound once in nine days. Referring to Professor Lister's carbolic acid treatment, Mr. Gamgee said: "Until the distinguished surgeon whose intimate friendship during the whole of my studentship I shall deem one of the greatest happinesses of my life, thinks well to publish his views and experience in a collected form, it will not be possible to examine them with that completeness and impartiality which his character and position, no less than the importance and difficulty of the subject deserve; but having read all that the Edinburgh Professor has hitherto published, and having seen his practice, with the advantage of his personal exposition in the Glasgow Infirmary, I do not hesitate to say that, so far as I am able to judge, the practice of introducing pure carbolic acid into the innermost recesses of a compound fracture is a mistake."

Art. 151.—*On Excision of the Joints for Disease, and especially of the Knee, Hip, and Elbow.**

By Frederick James Gant, F.R.C.S., Surgeon to the Royal Free Hospital.

(*The Lancet*, April 30.)

The primary object of this paper is to lay before the Society the *conditions of disease* which, in the author's experience, seem to be appropriate for excision of the joints in general; and those conditions also which specially pertain to the knee, hip, and elbow, severally, with relation to this operation, as illustrated by the accompanying cases.

So far as the appropriate nature of these conditions of disease may be established by the typical character of the cases adduced, and confirmed by an increased number, they will represent principles whereby

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* Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, April 12.

to determine the propriety of performing the operation of excision in diseases of the joints.

With this view the author has appended a careful analysis of each series of cases in regard to their pathology and the operation itself, and its results; and also of the general results of excision in the cases taken collectively, and the relation of these results to the pathology of the joints subjected to operation.

The necessity either for excision or for amputation in joint disease implies incurability by non-operative treatment. As regards excision, incurability is defined to signify that condition of the local disease wherein the joint has become *functionally useless* by destruction of the articular cartilages, without the supervention of anchylosis, but while the *constitution* still retains the reserve power requisite for the long process of reparative union—averaging three months after removal of the diseased bone. Any other cases—namely, of advanced local disease, —if not falling within the provision of the latter clause of the definition as to the requisite constitutional reserve power, but which are accompanied with prolonged hectic and exhaustion, will be proportionately unfavourable or unfitted for excision, and must be submitted to the alternative operation—amputation.

As compared with the *natural cure* by anchylosis, as a possible result in joint-disease, excision would seem to be preferable in proportion to the more prolonged period of recovery when unaided by surgical removal of the diseased bone, a probation which entails long-continued suffering, and ultimately leaves the constitutional vigour reduced and inadequate to sustain the contingencies of disease in after-life.

Failures of the natural cure are then considered with regard to excision. This comprises two results: defective kind of anchylosis for the functional use of the limb, as fibrous anchylosis in knee-joint disease, and osseous anchylosis in elbow-joint disease; or malposition of the limb, accompanied perhaps with defective anchylosis.

The author then proceeds to state *in extenso* the pathological conditions, or those of disease, and their results from failures of reparation, which severally justify the operation of joint excision, and those also which specially pertain to the knee, hip, and elbow. The histories of the illustrative cases are narrated, and their analyses appended.

The following *general* results may be enumerated in this abstract:—

1. *Excision* proved successful, by one operation, in 16 out of 20 cases of the joints referred to.

2. Of the 4 unsuccessful cases, by one operation, 3 were cases of *scrofulous* disease, and of the knee-joint, out of a total of 9 cases; the remaining one being *chronic synovitis*, and of the elbow-joint, out of 5 cases.

3. *Re-excision* was resorted to in 2 of the 4 cases; 1 knee-joint and 1 elbow-joint, the latter with a successful result.

4. *Secondary amputation* in 3 of the 4 cases. All 3 were knee-joint cases, and of scrofulous disease; one of which had been subjected to re-excision. The 3 amputations made *rapid recoveries*. These results tend to show that if the attempt to preserve a limb by excision, and even by re-excision, of a large joint, as the knee, should fail, the

operation is not unfavourable to secondary amputation for the preservation of life.

5. *No death* ensued in any of the 20 cases of the knee, hip, or elbow-joints, whatever had been the condition of disease, or the operation,—excision, re-excision, or secondary amputation.

Art. 152.—*On the Treatment of Effusions of Blood in Cases of Compound Fracture.*

By M. Bourguet, of Aix.

(*Montpellier Médical*, 1869.)

This memoir terminates with the following conclusions:—

1. The actual doctrine relating to the abstaining from all surgical intervention in cases of large effusion of blood communicating with the seat of a fracture so long as the fracture itself is not consolidated, is too absolute.

2. Capillary punctures or punctures with a very small orifice, by evacuating the collection of fluid without allowing air to penetrate into the interior, are capable of rendering undoubted services in the treatment of compound fractures.

3. The puncture ought to be repeated as often as the blood tends to accumulate in the hæmatic sac and to distend its walls. Each puncture should be made in a different place.

4. The most favourable moment for practising the first puncture is when it is perceived that the resolution of the tumour makes no more progress, that its walls are becoming thinner, that fluctuation is becoming apparent, and likewise when some signs of inflammation have been discovered.

5. The facts hitherto collected tend to demonstrate that this practice, far from favouring suppurative inflammation at the seat of fracture, rather serves to prevent it, and at the same time permits adhesion of the integument and a gradual retraction of the walls of the hæmatic cyst itself.

Art. 153.—*Nævoid Elephantiasis.*

By Thomas Smith, F.R.C.S.

(*St. Bartholomew's Hospital Reports*, vol. v.)

This very curious affection, which has been named and described by Professor Fayrer, seems to consist in the ordinary form of elephantiasis, or Barbadoes leg, *plus* a nævoid condition of the skin and subjacent tissues. Mr. Smith has seen two such cases, the best marked of which forms the text of the present paper. It occurred in a child of nine months, having existed at the time of birth, when it greatly impeded delivery; but since the age of seven months had very much increased. The whole of the right lower limb and buttock were hypertrophied, the

leg and foot being in a condition undistinguishable from that seen in elephantiasis Arabum, while the thigh, though proportionately less enlarged and softer, was extensively stained on its outer side, with a dusky red cutaneous nævus. The limb was extensively warmer than its fellow, from three to four times its circumference, and three inches longer, the lengthening being due to hypertrophy of the integuments over the heel and plantar surface. The swelling diminished somewhat under firm bandaging, but the child soon after died without any very obvious cause. A very good description of the affected part, which was removed and carefully dissected, is added, and illustrated with three excellent lithographic plates. Mr. Smith refers to several cases lately published of *elephantiasis* accompanied with *lymphorrhœa.*

"It is thus not unlikely," adds Mr. Smith, "that under the term Elephantiasis Arabum, three diseases, quite distinct in their origin, though identical in their results, have been often included—namely, what we may term lymphatic elephantiasis, vascular or nævoid elephantiasis, and the ordinary elephantiasis Arabum of climatic origin. These diseases, though arising from different causes, have this in common, that as a consequence, the elements of nutrition (whether contained in blood, chyle, or lymph) are in excess in the part affected, and that as a natural result the overfed tissues become overgrown, the over-growth being specially manifest in those tissues that are more lowly organized, and are perhaps less discriminative in the materials they select for their nutrition."

The question of tying the common iliac artery had been discussed before the death of the patient, and Mr. Smith therefore, as an experiment, tried to apply a ligature upon the corpse, but found so free a flow of blood from the spongy venous tissue in the lumbar region, as to render it very doubtful whether the operation would have been practicable during life.

Art. 154.—*A Case of Traumatic Tetanus Treated by Subcutaneous Injection of Calabar Bean.*

By William Haining, M.D., House-Surgeon to the General Infirmary, Chester.

(*The Lancet*, December 18, 1869.)

Dr. Haining reports a case of traumatic tetanus treated by subcutaneous injection of Calabar bean which exemplifies the beneficial effect of the remedy as well as the safety with which it may be administered in doses hitherto regarded as dangerously large.

From the results obtained it may not be too much to infer, writes Dr. Haining, that in tetanus the administration of Calabar bean should not in any case be limited to effect mitigation of the symptoms, but should be perseveringly continued in doses gradually increasing from one grain every two or three hours, until either the tetanic spasms are completely overcome, or the physiological effects of the drug are manifested to a dangerous degree. Once having obtained a complete relaxation, it seems far from improbable that, in a large proportion of cases, careful,

free repetition of the doses on the return of the least appearance of spasm, may enable us to maintain complete control over the symptoms, until their cause becomes much enfeebled or is altogether removed.

Art. 155.—*A Case of Traumatic Tetanus Treated Successfully with Douches and Shampooing.**

By M. Brachet.

(*Gazette Hebdomadaire*, No. 47, 1869.)

The patient in this case was a gardener, who whilst reaping had cut his right thumb, the wound involving the pulp and part of the nail. Cicatrization was almost complete when the patient, after an exposure of some hours' duration to cold, was affected with pain in the neck and severe tetanic symptoms. When M. Brachet saw the patient, twenty days after the wound in the thumb, the tetanic phenomena were complete. The patient, in the horizontal position, touched the bed only with the summit of his head and his heels; all the dorsal muscles were contracted. The fingers were bent, the facial muscles contracted, and the integument of the face and neck of a violet colour. The arms alone could be moved; the pulse was small, the skin cold. These symptoms had lasted for five days before M. Brachet's visit. On the following day the patient was placed in a bath at 36 degrees centigrade, and a very powerful douche was applied whilst shampooing was being performed. The first trial gave no good result. On the following day, three douches of three hours' duration each were applied, and at the same time energetic shampooing. This was continued on the following days. Five days after the commencement of this treatment, the patient performed some movements of flexion with his head, and the mouth could be opened. Next was observed a progressive relaxation of the muscles of the back and jaw. Deglutition could then be performed, and the patient for the first time since the commencement of the bad symptoms, was able to sleep. The action of the skin was resumed, and the patient made a complete recovery.

Art. 156.—*On Certain Points in the Treatment of Venereal Diseases.*

By W. Johnson Smith, F.R.C.S. (Exam.), Assistant Surgeon Seamen's Hospital, Greenwich.

(*The Lancet*, March 19.)

At a meeting of the West Kent Medico-Chirurgical Society, held February 11, Mr. W. Johnson Smith read a paper on certain points in the treatment of venereal diseases. In discussing the treatment of gonorrhœa, he stated that the uncertain duration of the disease, and its

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* Communicated by M. Forget to the Société Impériale de Chirurgie.

frequent persistence, in spite of active treatment, were to be rather attributed to neglect of rest and points of hygiene, than to inertness of the surgeon's remedies. The chief remedies, in a case of acute gonorrhœa, he considered were the alkalies, tincture of aconite, bromide of potassium, and the balsams, of which the oil of yellow sandal-wood was by far the most efficacious. In speaking of gonorrhœal epididymitis, the author stated that in mild and subacute cases the only treatment required was to keep the patient in the recumbent position, with the scrotum elevated for two or three days. In very acute cases, where the inflammation of the scrotum was high, and speedy relief required from the severe pain, puncture of the testicle, as recommended by Mr. Henry Smith, was a very beneficial proceeding. In speaking of the treatment of constitutional syphilis, the author stated that of late years there had been a tendency among surgeons to substitute an external for an internal administration of mercury. The last step in this direction consisted in the hypodermic injection of this agent, a mode of treatment for some time past extensively practised in Berlin and in Paris, and lately advocated in this country by Dr. Walker, of Peterborough. For iritis, scaly eruptions, and mucous patches, a solution of corrosive sublimate, injected below the deltoid muscle or under the skin of the back, acted far more efficaciously and speedily than other modes of administering mercury. The great disadvantage of the hypodermic mode was the severe and persistent pain at the seat of the puncture. The injection was often followed, in the course of from thirty-six to forty-eight hours, by a painful and circumscribed swelling in the subcutaneous connective tissue, which generally disappeared in the course of twelve hours.

Art. 157.—*On the Treatment of Constitutional Syphilis by the Use of Creasote and Carbolic Acid.*

By John Morgan, F.R.C.S.I., &c., Surgeon to Mercer's Hospital, and the Westmoreland Lock Hospital, Dublin.

(*Medical Press and Circular*, January 12.)

Having treated, during the last twelve months, a large number of cases of constitutional syphilis by the administration of creasote in full doses, Mr. Morgan draws attention to its value when given in the early stages of constitutional infection, and specially where mercurial treatment is inadmissible, or when patients are of the strumous diathesis.

Mr. Morgan cannot claim for the creasote treatment a uniform success, but he has found it most decidedly useful and curative in many instances of constitutional manifestations.

The cases in which the author adopted this method were chiefly those suffering from the first influences of this "syphilitic constitution," such as mucous patches, roseola, papular eruption, and cachexia. The usual plan he followed was, keeping the patient in bed as far as possible, allowing a nourishing diet, and the use, at least every second night, of a warm bath, to which two ounces of carbolic acid were added; the

patient should remain in this bath half an hour, or even longer, so as thoroughly to influence the skin. The creasote mixture Mr. Morgan prescribed was—

℞ Creasoti, ℥j.
Mucilaginis, ℥j.
Tere et adde—
Tinct. opii, ℥j.
Aquæ menthæ pip., ℥vij. M.
Sumat coch. i. magnum, quater in die.

Usually within ten days an amelioration takes place, and gradually the signs fade. Should iritis or any acute sign appear requiring mercurial treatment, this remedy can be given as well as the creasote mixture.

Art. 158.—*Case of Syphilis Treated by the Subcutaneous Injection of the Perchloride of Mercury.*

Under the care of Dr. M'Call Anderson.

(*Glasgow Medical Journal*, February.)

The following case is reported by William MacEwen, M.B., C.M.:—C. K., aged fifteen, worker in pottery, was admitted on November 12, 1869. He was feverish, and complained of rheumatic pains in his right elbow and left shoulder. These had existed for a fortnight, were very severe, most so at night, and were accompanied by swelling of the affected joints. Pulse, 82; of fair strength. Bowels costive. Tongue clean.

On examination of patient, Dr. Anderson found that he was labouring under gonorrhœa, complicated with phymosis, and he pointed out that in all probability this was a case of gonorrhœal rheumatism, and not, as at first sight appeared, of rheumatic fever. This opinion was verified by the fact that there was an absence of cardiac affection, and sour-smelling perspiration, such as is often observed in cases of the latter disease; that the pain was very intense, and that there was no tendency of the inflammation to flit about from one joint to another. He was ordered an injection of sulph. cupri (gr. 1 to ℥i.), to be used five or six times a day; the following mixture was prescribed:—

Ox. potas. iodidi, ℥i.
Syr. zingib., ℥vi.
Tinct. gentian. Co., ℥iv.
Aq. ad ℥xxiv.
Sig., a tablespoonful three times daily.

In a few days the inflammation had completely subsided in the left shoulder, but remained obstinately fixed in the elbow. Liniment of iodine was therefore ordered to be painted over the part, night and morning, on the 20th November.

On the 23rd, the part was decidedly easier, the gonorrhœa had disappeared, and the glans could be uncovered. A superficial cicatrix,

with slight induration, was then detected on the prepuce, the inguinal glands were engorged, small coppery stains were detected upon the thighs, a well-marked syphilitic roseola covered the chest and abdomen, and several glands at the back of the neck were found to be enlarged. There were no other constitutional symptoms, there was no fever, the patient felt well.

The previous treatment was stopped, and the following mixture was prescribed for subcutaneous injection.

℞ Hydrarg. perchlor., gr. iv.
Aquæ, ℥j.

The first injection was given on the 24th Nov. Every day 15 min. ($\frac{1}{8}$ grain) was injected into the subcutaneous cellular tissue of back at first, latterly of gluteal region. The pain of the injection was not severe, and was of short duration; and no local inflammatory symptoms were induced. By the 16th Dec. he had had twelve injections (*i.e.*, gr. $1\frac{1}{2}$ of the perchloride had been used.)

The glandular enlargements were decidedly diminished, the syphilitic roseola had disappeared, but the coppery stains on the thighs were still visible. There was not the slightest indication of salivation, and the patient felt well in every respect.

The rheumatic affection of the elbow disappeared entirely a few days after the perchloride was commenced. The injections were continued daily until the 2nd Jan. 1870, by which time 5 grs. had been injected, and he was then dismissed.

Art. 159.—*On Induration in Syphilis.*

By Victor De Meric, F.R.C.S.

(*Medical Press and Circular*, February 16.)

At a meeting of the Harveian Society of London, held Feb. 3rd, Mr. De Meric read a paper on induration in syphilis.

Before entering on the subject in hand, the author cautioned his hearers as to the danger of being hasty in diagnosis respecting recent lesions on the parts of generation; and alluding to the lesions called chancre, he stated that he believed the latter, *bonâ fide* syphilitic, to be simply the first sign of the contamination of the organism. This chancre was almost always indurated, and therefore it was interesting to discuss the four following points:—1. What is known of the histology of the indurated mass? 2. The peculiarities of the latter according to locality; 3. Whether this kind of induration can be easily distinguished from other kinds; and 4. Whether syphilis may exist without it. Mr. De Meric treated these points in a rapid manner, showing—1st. That our knowledge as regards the nature of the induration was as yet imperfect; and 2nd. That very striking distinctions existed as to shape and feel of the induration according to locality. The author alluded especially to the indurated stratum said to form the base of those well-known chancres which are observed on the skin of the penis. This parchment induration, as it has been called, he had often sought in

vain, and thought it rather problematical. Such chancres, however, he had always seen followed by secondary symptoms. Mr. De Meric inquired, in the third place, whether mistakes were likely to occur as to distinguishing syphilitic induration from simple œdema and ordinary infiltration, very simple rules for avoiding error being pointed out. The important subject of the complete absence of induration in the irritatory symptoms of syphilis was then discussed. From cases quoted it was shown that this induration may be completely absent, and that exceptional instances have been noted by the author where no evident irritatory symptom could be made out. Mr. De Meric concluded his paper by some remarks on the therapeutics of induration, mercury being the chief agent used.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 160.—*Clinical Lecture on Injuries of the Head.*

By JAMES PAGET, F.R.S.

(*British Medical Journal*, February 5.)

The subject of this lecture was illustrated by two cases of injury to the head, which have lately been under Mr. Paget's care.

In the first case, a boy, aged eleven years, met with an accident which caused a compound, slightly depressed, and starred fracture of his left parietal bone. He was stunned for some hours, then vomited, and the next day sat up in bed and answered questions. He had then no symptoms of compression, and for that reason he was not trephined. He went on well for twelve days, but on the thirteenth he was found to be flushed, and to have a rapid pulse, quick breathing, and a temperature of 103·2; two days later he was found to have signs of double pneumonia, after which he gradually sank, and died two months after the accident. At the post-mortem examination both pleuræ were found filled with purulent fluid. The dura mater corresponding to the depressed portion of the bone was inflamed and adherent to the bone; there was no inflammation of the arachnoid, but in the substance of the hemisphere immediately beneath the depressed fragment of bone, was a small abscess or slough of brain-substance, about as large as a sixpence in area.

In alluding to this case, Mr. Paget remarked that compound fractures of the skull in young persons are usually recovered from without interference when there are no signs of compression, but considered it possible that in this patient, trephining, although contrary to his usual practice in such cases, might have been beneficial. Mr. Paget thought, however, that it was very doubtful whether the elevation of the depressed fragment would have put the lad in any better position with regard to pyæmia than leaving it alone. In referring to the treatment of the secondary inflammation in cases like this, Mr. Paget said that he was not aware of any rule which could be laid down on the subject;

secondary trephining in the present case would clearly have been absurd.

On the question of trephining for injuries of the head, Mr. Paget said he did not consider that large enough statistics of successes and *failures* had yet been collected to admit of our forming rules which shall be constantly applicable. Mr. Paget gave the following provisional laws as, in his opinion, expressing the results of our present knowledge.

1. *Simple Fractures of the Skull.—a.* When there are no signs of compression, and no depression, leave the patient alone. *b.* Without depression, but with signs of compression (*i.e.*, abiding insensibility), we may interfere *if we can diagnose the seat of fracture. c.* When there is depression, but no sign of compression, it is best to do nothing if the patient be *young:* if *old,* however, there is some doubt about the propriety of non-interference. *d.* When there is depression and compression we must operate.

2. *Compound Fractures.—a.* When there is no depression, and no sign of compression, as a rule—especially in young patients—do nothing. *b.* When there is no depression, but there are signs of compression, it is right to interfere. *c.* With depression, but no signs of compression, it is best not to interfere when the patient is young; but probably it is right to operate on an old person. *d.* With depression and abiding insensibility, operate.

The second patient to whom Mr. Paget referred was a man who was admitted for compound fracture of the lower jaw and of the nasal bones, lacerations, and contusions. He was supposed, from appearance after the accident, to be drunk. The next day he was quite sensible, but restless; on the fourth or fifth day he became partly comatose; his breathing was very quick, and his face became much swollen and erysipelatous. Mr. Paget diagnosed some secondary erysipelatous inflammation in the cranium. The man continued to get worse, and died. At the post-mortem examination a fracture was found extending through the nasal bones, superior and inferior maxillæ, ethmoid, sphenoid, and basilar process of the occipital bone, into the foramen magnum. Purolymph in abundance lined the dura mater, and pus was found in the meshes of the pia mater, especially along the lines of the larger arteries. Mr. Paget called attention to the disproportion between the immediate symptoms in this case and the extent of the injury, and remarked that fractures of the base are frequently unattended by signs of compression. Mr. Paget also noticed, in this connexion, that fractures of the anterior part of the skull are far less fatal than those of the posterior part.

Mr. Paget alluded, in connexion with these two cases, to the nature of the secondary inflammation, and insisted on the importance of drawing a broad line in practice between an inflammation which results directly from an injury and one which follows it at an interval of several days; the former being sthenic, the latter asthenic and allied to the erysipelatous inflammations.

This led to the subject of *erysipelas.* Mr. Paget referred to a case now under his care, which illustrated the tendency of erysipelas to shift about from one part or organ to another. The disease, Mr. Paget remarked, is well known to shift from one part of the surface to another,

and from the surface to a deeper organ, but it very rarely shifts from a deep structure to one more superficial. Mr. Paget mentioned the following case as an illustration of this rare condition. The patient (a little girl) was admitted on account of a severe burn. She became affected with delirium, fever, and restlessness, and these symptoms led Mr. Paget to diagnose an inflammation of the brain membranes. When she had been in this state for three days, however, erysipelas appeared on the scalp, and simultaneously the delirium was relieved, showing, in Mr. Paget's opinion, a translation of the erysipelatous inflammation from her brain membranes to her scalp.

In connexion with the recent occurrence of some cases of erysipelas in his wards, Mr. Paget made some remnrks on the extreme importance of cleanliness in the treatment of this disease, especially with the view of preventing infection. Mr. Paget said that, although several cases of erysipelas had been in the neighbourhood of patients on whom operations had lately been performed, and had even *originated* in the wards, yet no single case of propagation of the disease had occurred; and that he believed this result to be mainly due to scrupulous care in keeping everything about the patients and in the wards very clean, dry, and well ventilated.

Art. 161.—*When and when not to Trephine.*

By Baron Larry.

(*Chicago Medical Journal*, October, 1869; and *New York Medical Journal*, April, 1870.)

Baron Larry, in his important work on trephining, in traumatic lesions of the skull (published by Victor Masson and Co., Paris), thus summarizes the indications and contraindications for this operation:—

Indications.—Trephining should be practised in traumatic lesions of the head, if symptoms, clearly localized and circumscribed, persist, and, if all other means are unavailing, in the following cases:—

1. In fractures of the vault, by perforation or with embedding of the fragments, whenever the injury to deep-seated parts occasions grave and continuous consequences, while remedial measures other than trephining may be impossible or inefficacious.

2. In fractures complicated with the perforation of foreign bodies of the thickness of the cranium, or with penetration into the superficial layers of the brain with persistence of symptomatic accidents, if the extraction of the foreign body can be effected in no other way.

3. In the different mechanical lesions of the head, complicated with grave and persistent cerebral symptoms, such as contusion and compression of the brain, or even prolonged hemiplegia with extravasation of blood or of pus, considered as circumscribed, provided that the lesion can be localized, and provided especially that active therapeutics remain insufficient.

Contraindications.—Trephining should not be attempted in cases of lesion speedily or necessarily fatal, nor in those presumed to be curable by other means:—

1. When a foreign substance, lost in the deep portions of the brain, has passed beyond the reach of instruments.

2. If blood or pus, extravasated within the cranium, does not appear to form a focus in relation with the opening in the bone.

3. In every case of fracture not complicated with firm embedding of the fragments, nor with prolonged phenomena of compression or paralysis.

4. In the condition of cerebral commotion or coma, with or without localized lesions.

5. In indeterminate or epileptiform convulsions, not persistent and susceptible of cure.

6. In diffuse inflammation of the brain or its membranes, when clearly appreciable.

Art. 162.—*Extraordinary Recovery from Extensive Saw-wound of the Skull.*

By A. C. Fulsom, M.D.

(*Pacific Medical and Surgical Journal.*)

Dr. Fulsom relates the following:—A man received a dangerous wound of the head from a circular saw, and was seen by him in about half an hour, when he found the condition of things to be as follows:—The wound commenced at the frontal bone, half an inch above the nose, and extended a little to the left and a little below the occipital protuberance, passing through the superior edge of the parietal bone. Measured by the convex surface of the skull, the length of the cut in the bones was nine inches. They fell apart over an inch—the length of the scalp wound being eleven inches. The membranes of the brain, as well as its substance, were divided, the former much lacerated, and the latter falling apart sufficiently to admit a common pocket rule to the depth of one and a half inches, and a small silver probe two inches, before touching the walls of the cut. Thirty-two minute pieces of bone, together with considerable sawdust, were taken from the wound, also a tablespoonful of the substance of the brain. No large arteries were severed, and the patient did not lose over two ounces of blood. The pulsation of the cerebral arteries could be distinctly felt, and there was no congestion of the brain or its membranes. The pulse 72. No pain or undue sensitiveness about the wound. The patient could not tell when the brain, membranes, or walls of the cut were touched, but the scalp was sensitive when handled. The cranial bones were brought in apposition by placing a tourniquet around the head, and gradually tightening it. The scalp wound was brought together by sutures, places being left for the exit of pus. The sutures were removed on the eighth day, and the wound healed by first intention, except at the places purposely left open. There was no cerebral disturbance, and no medicine required. He was dismissed at the end of three weeks, and in five or six weeks from the date of the injury he was again at work in the mill.

Art. 163.—*Total Loss of Nose through Disease; Rhinoplasty by a New Method; Successful Result.*

Under the care of Mr. John Wood, at King's College Hospital.

(*The Lancet*, February 26.)

Cosmetic surgery has not arrived at such a state of perfection as that a new process for the restoration of a lost nose will be unacceptable to those charged with the task of supplying so important a feature. The result in the following case was good.

John R——, aged twenty-seven, was admitted on the 13th September, 1869. The nose was entirely absent, the centre of the face presenting a large orifice, the margins of which were formed of tense cicatricial tissue. This hideous disfigurement was the result of a slowly spreading ulceration, which commenced in the summer of 1867, in the East Indies, after an attack of scurvy, and persisted up to November of the following year, in spite of caustic applications. The disease commenced at the left internal canthus, and finally invaded the palate bone, causing in its progress an almost complete destruction of the nose. The man's condition had been rendered more distressing by an unsuccessful attempt which had been made, before his admission under the care of Mr. Wood, to form a nose from the skin of the forehead. The patient, who seemed a healthy man, was extremely anxious to have something done for his relief, and expressed himself as willing to undergo any operation, however slight might be its chances of success, for he felt that his condition could not be rendered worse.

Operation, Sept. 18th.—The patient having been placed under the influence of chloroform, Mr. Wood took from the integument of the face, on either side of the central chasm, two large leaf-shaped flaps, the pedicles of which were directed towards the corresponding internal canthi, and made broad in order to permit a full vascular supply to the bodies of the flaps. A greater extent of flap was made on each side than seemed necessary at first sight for covering the nasal aperture, in order to allow for the subsequent shrinking of the skin, and the retractile action of the included muscles. After this stage of the operation had been completed, the upper lip was divided from above downwards, on either side of the median line, and an oblong flap formed, which was then elongated by a slit having been made between the mucous and cutaneous surfaces, as far as the free border of the lip, which was not cut through. The long and thin flap thus formed was turned upwards, and fastened by a suture to the upper edge of the nasal chasm, and the external flaps were then carried inwards from the cheeks, and applied over its anterior raw and bleeding surface. The long strip of living and vascular tissue thus formed by the division of the outer from the inner surface of the lip, made a good base of support for the new nose. The lateral flaps were stitched together in the median line, and to the tissues at their outer edges, with the exception of a small portion on the left side, where the tissue was cicatricial, and too thin to allow of extension. The wound in the upper lip was then closed by pins

and twisted suture. In the final stage of the operation, the edges of the large gaps formed by the removal of the lateral cheek flaps, were brought together, and towards the middle line, by sutures of thick wire passed from one side of the face to the other, and made fast at both ends to pieces of an elastic urethral bougie. The soft tissues of the cheek were previously detached over a great extent from the bone beneath, in order to facilitate the inward gliding of the integument over the raw surfaces, and also to prevent the zygomatic muscles from acting on the new nose. Before the patient's removal from the operating theatre, a small apparatus consisting of two pieces of elastic catheter, traversed by a piece of wire bent at an acute angle, was passed behind the newly-formed septum, and under the lower margins of the lateral flaps, in order to allow the passage of air, and to support the transplanted and flaccid alæ.

From the date of the operation the case made favourable and rapid progress. On October 30th the patient was shown in the operating theatre, and then presented a great improvement in his personal appearance. The large and unsightly aperture in the centre of the face had been covered over with sound and firm integument, and was somewhat elevated above the level of the surrounding parts, forming a very useful nose.

Mr. Wood, in his remarks upon the case, stated that the man had been retained in the hospital for a short time, as he intended to devise some small instrument for insertion behind the newly-formed organ, in order to render it more prominent.

Art. 164.—*Notes of a Case of Expansion of the Antrum of Highmore.*

By the late Charles Hewitt Moore, F.R.C.S., Surgeon to the Middlesex and St. Luke's Hospitals.

(*The Lancet*, March 26.)

At a meeting of the Clinical Society of London, held February 25th, Mr. C. H. Moore read notes of a case of expansion of the antrum of Highmore. The patient was a gentleman, above whose right bicuspid and first molar teeth a rounded bony tumour projected into the mouth. At two parts circular holes in the bone could be felt through the mucous membrane. The mucous membrane covering the posterior aperture gave way, and an exceedingly fetid, pultaceous, brown substance escaped slowly into the mouth. Mr. Moore made a more free opening into an anterior part of the tumour, and, squeezing out much of its offensive contents, examined the cavity with a probe. He found the space to correspond with the normal relations of the antrum, except towards the malar portion, where in a third place the bone was defective, and the probe could be felt against the cheek. No dead bone could be detected, and throughout the progress of the case no trace of the fetid substance was ever recognised by the patient in his nostril. The teeth next to the tumour were sound, but outside the first molar the gum had re-

ceded, and a fine probe introduced with light pressure at that spot passed up the socket for an inch and three quarters above the crown of the tooth, where it struck against the floor of the orbit, there being expansion of the anterior part of the antrum, and circular apertures in its wall, resulting from distension, not from ulceration; the orbit and palate were free from deformity, and the nostril also was natural, having no communication with the fetid stuff in the bony antrum; there was, moreover, no burrowing suppuration, and no necrosis. Mr. Moore concluded that the cause of the expansion lay in the communication of the bony antrum with the mouth, and that the peculiar substance was food driven up by mastication through the socket of the healthy molar tooth. This substance had slowly stripped off the lining membrane of the antrum, and thrust it inwards, thus obliterating the antrum as a mucous cavity. A vulcanite tube being worn in the opening which had been made with the knife, and frequent cleansing of the cavity practised, the bony expanded shell of the tumour receded, and in a few months the natural form of the features was restored.

Art. 165.—*On Strangulation of the Tonsils.**

By Dr. Houze de l'Aulnoit.

(*Gazette Hebdomadaire*, No. 17, 1870.)

"Strangulation of the tonsils by the pillars of the fauces is a very frequent affection, especially among adults, although it has not been described by authors.

"In order for the strangulation to take place, it is necessary that adhesions produced by old inflammation exist between the tonsils and the pillars of the fauces, that the increase in the volume of the tonsil be very rapid, and that the anterior pillar be sufficiently developed and enlarged to form a constriction for the gland, and to oppose its expansion towards the region of the pharynx.

"Spasmodic contraction of the pillars by facilitating the process of strangulation may give rise to the acute pain experienced by the patient in the variety of angina here discussed.

"The treatment is surgical. It consists in section of the anterior pillar, an operation readily performed and of no danger."

Art. 166.—*Case of Salivary Fistula; Recovery after the Introduction of a Probe.*

Under the care of Mr. Pick, at St. George's Hospital.

(*The Lancet*, February 19.)

In the following case the result was as satisfactory as it was unlooked for; and is interesting inasmuch as it shows how recovery may take

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* Communicated to the Académie de Médecine.

place sometimes in a class of cases which are found, at other times, to be most intractable and difficult of cure.

A girl, aged about twenty, presented herself as an out patient at St. George's Hospital, under the care of Mr. Pick, suffering from salivary fistula, which caused her great annoyance, and for which she was anxious to have some operation performed.

The history of the case was very imperfect, but it appears that owing to some unknown cause, when a child she had suffered from an abscess of the face, and that ever since the sinus had remained open; she had had constant dribbling of clear watery fluid from it, which was increased during the process of eating, and she had suffered from dryness of the mouth on the affected side. She was admitted to the hospital with a view to some operative proceeding.

Mr. Pick made an attempt to pass a probe down the canal, in order to ascertain if any opening existed into the mouth; and after employing a slight amount of force, succeeded in passing it a short distance, perhaps half an inch, but was unable to introduce it any further in consequence of the probe being too large. The attempt was therefore abandoned until a smaller probe could be obtained.

The following morning the patient was surprised to find that her pillow, which was always saturated with moisture, was quite dry; and, upon examination, it was found that the opening was completely closed. She remained under observation for a week or ten days, and the part remained perfectly sound. The saliva found its way into the mouth, and she entirely lost the sensation of dryness of which she had before complained.

Art. 167.—*Modifications of Astigmatism produced by the Accommodation.**

By Dr. W. Dobrowsky.

(*Archiv für Ophthal.*, Band xiv. iii. s. 51-105.)

The author of this paper endeavours to elucidate the effect which the accommodation has upon astigmatism. He first advances the proposition that, by spasm of the ciliary muscle, astigmatism may be fully compensated and annulled. This he proves, first, by a series of cases, in which asthenopia was found to depend on latent astigmatism; the existence of the refractive error was discovered only by the vigorous and prolonged use of atropine. He next undertook a series of experiments upon himself and upon a colleague. One eye he paralysed by atropine, the other was left normal, and he made many trials of cylindrical and spherical glasses. These were varied in every possible manner. He concludes that, for an astigmatic eye with accommodation entirely suspended, the best vision is obtained when the retinal image is formed at a point midway between the two extreme foci, where the circles of dispersion are circular and not oval. But he found that this was not true, when

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* From the Clinic of Prof. Ed. Junge, St. Petersburg.

the accommodation was active. On the contrary, the accommodation often abolished the astigmatism, as shown by the perfect definition of very fine print. This was not always accomplished, and required a sensible effort and practice. He could, with hypermetropic astigmatism 1-20, read Snellen xx. at 20 feet. He even concludes that it is easier to overcome a refractive error calling for a cylindrical glass, than an equal error calling for a spherical glass.

The experiments are very numerous, and cover many details which cannot here be cited.

His second proposition is, that unequal contraction of the ciliary muscle and unequal bulging of the lens may diminish astigmatism without causing its entire disappearance. In proof, he reports a case and alludes to others.

In the third place, he asserts that strain and spasm of accommodation may increase astigmatism, and reports a case of myopic and one of hypermetropic astigmatism thus evoked.

Fourthly, spasm of accommodation may change the type of hypermetropic astigmatism, and even transform H to M in one or both meridians.

Fifthly, tetanic contraction of the ciliary muscle may so far increase an insignificant degree of astigmatism as to render it necessary to be corrected by glasses.

From these investigations, which are deeply interesting, he concludes that a correct diagnosis and treatment of astigmatism cannot be made without resorting to the full influence of atropine in addition to the other methods.

Art. 168.—*Operation for Dynamic Divergent Strabismus, in reference to Progressive Myopia.*

By A. von Graefe.

(*Monatsblätter für Augenheilkunde*, s. 225-282, August and September, 1869; and *New York Medical Journal*, February.)

Professor Graefe called attention to a form of asthenopia due to inefficiency of the internal recti muscles, in an article in the *Archives for Ophthalmology*, viii. 2, p. 362. He now considers the same defect in its relations to myopia. He has kept record of eighty (80) cases in which he has done this operation, and found that only six of them continued to increase rapidly in myopia, and four to increase slightly. In the remaining seventy cases the myopia was arrested or diminished. All the cases had, during the two years preceding the operation, grown worse, as from M 1-7 to M $\frac{1}{4}$, or from M 1-24 to M 1-10, or from M 1-12 to M 1-5, and cases of less decided increase were not noted; almost all the cases had employed prismatic or concave prismatic glasses without effect, and all the patients could do at least as much work after as before the operation, sometimes requiring aid of prismatic glasses besides.

Insufficiency of the interni renders it impossible for myopes to completely relax their accommodation—unless one eye is excluded in near work. In such cases we may under-estimate the myopia—if we judge by the reading distance. A patient may read diamond print at 7

inches, but require —5½ for distance instead of —7. After being operated on, or when wearing abducent prisms, the myopia may seem to diminish. Those who had been using —12 may then see equally well with —14 or —16, or even —18. Besides the tension of the accommodation, the muscular exertion in the effort of convergence tends to increase the protuberance of the globe, and this is further aggravated by the internal congestion which such efforts excite. The loss of muscular equilibrium includes all the elements calculated to render myopia progressive.

It might be argued that it were unreasonable to expect a perfect muscular capacity for binocular vision in cases of M ¼ or ⅓—the range is too great, and such cases are not to be operated on, but only those which show decided divergence for distance. In answer, it must be remembered that there are many cases which, for distance, cannot produce absolute divergence, or at most not more than 4°, which at medium distances exhibit perfect equilibrium, but only at near distances show dynamic divergence. Were the eyes emmetropic, this state of the muscles would be perfectly normal. But the subsequent history shows a different condition—the divergence becomes more positive, and at length a remarkable facility for abduction at the distance appears, amounting to prisms of 8°, 12°, 16° or more. To bring out this abductive faculty, it may be needful to let patients wear prisms (the bases inward), for a day or two, when it will be found increased sometimes as much as from 6° to 10° or from 10° to 15°.

In case of those who use but one eye for near work, and exclude the other, Prof. Graefe thinks the operation less imperative than for those who work with forced convergence, but thinks it possible to obtain comfortable binocular vision at near work, in cases where myopia is not greater than ⅓ or even ¼, by means of the operation on the externi, and aided perhaps by suitable glasses, either concave prismatic, or simply prismatic.

In deciding upon the existence of dynamic divergence or feebleness and consequent strain on the interni, the mode of examination is of great importance. That a patient can sustain binocular fixation on an object brought within 2½ inches of his face, is not decisive: nor can we rely on the divergence of one eye when it is covered by a screen; even the customary test of the dot and vertical line, seen through a prism, which causes vertical diplopia, needs to be cautiously relied on. The line should be very fine and the dot large. If, when the prism, is held absolutely vertical, the patient sees only one line and two dots, we are not sure that he may not be straining his interni. An inclination of the base to the temporal side should provoke crossed images, and inclination to the nasal side homonymous images. If this occur, the convergence is really relaxed. If this do not occur when the base is shifted a little to one side or the other, but the only effect produced is to make the dots come a little nearer together and remain vertical to each other, the line not becoming doubled, the test is not conclusive. Repeat the experiment with a much finer line and larger dot, or with a figure in which the line is very short, or simply with a dot.

Even in the last case some patients have so strong a disposition to efforts of fusion that the dots will continue perpendicular when the prism

is turned from side to side. In such a case, substitute a short and oblique line, or let the dot be very small.

The examination should be made quickly, and will usually succeed by using the short line and dot, or the dot alone, while the prism shall be very slightly tilted laterally. This testing applies to the ordinary working distance—it should be repeated for a great distance—and finally, at still greater distances, similar examinations should be made substituting a candle for the figure.

A second part of the trial consists in ascertaining the power of abduction for distance. If loss of balance for the near makes an operation desirable, it is fully sanctioned by the discovery of a high degree of abductive power for the distance—that is, of facultative divergence. To find this correctly, the following rules are to be observed:—

1. Begin with objects held at rather short distances, because in determining the limits of binocular vision, we should begin from the region of single vision, not from that of double vision. I usually put before the patient a prism 18° (base inward), and gradually withdraw the candle until homonymous double images appear. The distance where this occurs gives an approximation of the abductive power. If this diplopia occur at five feet, repeat the trial with prism 16°; if at three feet, try with 14°. One must proceed from a near to a greater distance very gradually, else the prism chosen as the limit of the abduction will be too weak.

2. If the power of abduction seem too little in proportion to the distance at which disturbance of equilibrium occurs—that is, if less than 8°, the minimum amount which justifies an operation—the patient should be made to wear abductive prisms as spectacles for a few days. Often the power of abduction will be increased from 2° to 5°.

3. It is important that the double images be kept on the horizontal position; not the slightest deviation of the abductive prisms from the horizon can be allowed.

There are certain errors to be guarded against. 1. See that the patient is not excluding one eye from vision behind the prism. 2. The degree of abduction must be measured on a horizontal visual plane, and not with eyes turned down. In the latter case the limiting prism might be 6°, while for the horizontal plane it would be 9° or 10°. 3. The prism must not be momentarily overcome, but habitually.

The operation should be done upon the eye which most commonly diverges. If the insufficiency amount to 14° or 16°, both eyes should be operated on. To graduate the effect of the operation, the following hints may be given: A simple tenotomy done as for ordinary strabismus will be the equivalent of a prism of 16°. If the power of abduction be 14° or less, the tenotomy must be restricted in its effect by a conjunctival suture.

The effect of the suture depends on its direction, on the amount of conjunctiva included, and on the tightness with which it is drawn. If the tenotomy is to produce an effect of 14° or 13°, the suture should be nearly vertical in its course, and take in about 1‴ of conjunctiva. To limit the effect to 10° the suture should not be quite so nearly vertical, and should include 1½‴ of conjunctiva, and pulled tightly. For an effect of 9° or 8°, the suture to be horizontal, and contain 2‴ of conjunctiva. An effect of 18° may be obtained by lateral incisions into the sub-con-

junctival tissue. If more than this should be needed, as may rarely occur, a suture may be put into the conjunctiva at the inner side of the globe, a curved needle thrust in close to the caruncle, and its point brought out near the inner and upper border of the cornea, including a bridge of conjunctiva 3‴, 4‴, or 5‴.

Immediately after the operation, when the effect of anæsthesia has passed away, the muscular equilibrum must be tested. This must never be in the median line. The candle must be at least ten feet distant, and about 15° toward the side of the sound eye, and about 15° below the horizon. This may be called the place of election. In this situation there should always be perfect equilibrium immediately after the operation. If the effect is to be increased, the suture must be loosened or withdrawn—if the effect is to be abated, the suture must be tightened or take a deeper hold.

The loss of mobility is usually much greater in this operation than for true strabismus divergens. If no suture is used, the defect amounts to $2\frac{1}{4}'''$ to 3‴, or even more; after a suture of medium effect it amounts to 1‴ to $1\frac{3}{4}'''$. A defect of $2\frac{1}{2}'''$ corresponds to a prism of about 14°; $1\frac{1}{2}'''$ equals a prism of 8° to 9°.

The usual course of these cases is next minutely detailed, and the variations from the normal course. It is not until the third week that the final effect is reached.

The article, which has thus been greatly condensed, is worthy of the genius of its author, and cannot be justly presented without a full and literal translation.

Art. 169.—*The Extirpation of the Fibro-cartilage of the Upper Eyelids for the Cure of Certain Cases of Entropion and Trichiasis.*

By B. A. Pope, M.D., of New Orleans.

(*New York Medical Journal*, February.)

The suggestion which Dr. Pope makes, and has put in practice three times, applies to the worst and most intractable cases, in which the eyelids have atrophied and the tarsal cartilages become greatly deformed. He finds Arlt's well-known operation sufficient for most cases, but in these severe ones, after having made all the incisions and dissections of Arlt's method, he proceeds to remove the tarsal cartilage from the posterior flap, being careful not to damage the conjunctiva. This must be done piecemeal, and often with much difficulty. At the same time the upper border must be left so as not to disturb the insertion of the levator. The wound should not be sewed up until all oozing has ceased. The posterior flap is apt to hang lower than the anterior and seem redundant, but cicatrization gradually corrects the error, and the lid is left far more supple than before. The operation is spoken of as difficult to perform, and great care must be taken that the lower edge of the outer flap do not unite too early and too high up. Sometimes this operation will have to be preceded by another for blepharophimosis.

Art. 170.—*Contributions to the Pathology of Burns of the Cornea from Lime.*

By Dr. H. de Gouvéa, of Rio de Janeiro, Assistant to the Ophthalmic Hospital of the University of Heidelberg.

(*Archives for Ophthalmology and Otology*, vol. i. No. 1, 208-229.)

The conclusions of this paper, which consist chiefly of an account of experiments on animals' eyes, may be condensed as follows :—If the lime has remained for a short time in contact with the cornea, it not only causes destruction of more or less of its substance by the rapid withdrawal of fluid from the cornea, but it also penetrates into the substance of the tissue in the form of dust-like particles.

The cicatrix which follows not only contains lime-particles, but may present true petrifaction. The cicatricial tissue abounds in cells which anastomose with each other in every possible way; and contains nerves which terminate on the epithelium, and whose course precisely resembles the normal anatomical arrangement. If the cauterized portion of the cornea be removed, a white opacity does not result; on the contrary, the substituted tissue is transparent.

When the conjunctiva is burned, particles of lime penetrate to the episcleral tissue, and may at a later period form extensive incrustations on the sclera and adjacent muscles.

The density and persistence of the white opacity are in a great measure due to the influence of lime in the cicatrix.

It may be added that experiments with various acids utterly failed to dissolve and remove the lime, without, at the same time, injuring the tissues. The best mode of removing it when recent is by washing with warm water or sweet-oil, and removal by instruments such as a spoon, curette, or forceps. Lime which has been slaked is far less caustic and mischievous than in the anhydrous state, hence the moderate amount of damage which usually follows from mortar being thrown into the eyes.

Art. 171.—*A Method of Corelysis.*

By Dr. G. Passavant.

(*Archiv für Ophthalmologie*, Band xiv. 1, 259-264; and *New York Medical Journal*, February.)

This mode of tearing adhesions of the iris to the lens consists in making a small wound at the margin of the cornea, catching the iris with a pair of forceps, pulling it gently from its adhesions, and then withdrawing the forceps. The inner wound is far enough from the periphery of the iris to guard against entanglement, which is the chief danger; the teeth of the forceps are quite blunt. The eye must be fixed steadily during the operation, and afterwards confined with a bandage.

It is better to attack only one synechia at a time, so as to make the operation as slight as possible. A succession of adhesions may be thus

broken away at intervals of a few days. No serious results have attended the operations, which have amounted to fifty or more.

The first suggestion of this proceeding was in a case of cataract, where it was desirable to loosen a synechia, and, not being attended with any harm, the method was successfully applied to eyes in which the lens was clear. As many as four operations have been done on the same eye, and the pupil rendered circular and mobile. This little operation deserves trial, but demands very careful manipulation.

Art. 172.—*Further Remarks upon the Peripheral Linear Section for Cataract.*

By Prof. A. von Graefe.

(*Archiv für Ophthal.*, Band xiv. iii., 106-148, 1868.)

Professor Graefe adopts, for the section which he makes in extracting cataract, the name of peripheral linear section instead of scleral linear extraction. The reason for the name is, that the wound is situated in the sclera for scarcely half its extent, although made at the very margin of the anterior chamber. He gives it $5'''$ in length, and at its middle the height of the flap, that is, the distance between the straight line, which joins its extremities and the summit of the arc, is from $\frac{1}{4}'''$ to $\frac{2}{5}'''$. The exterior parts of the wounds are all in the sclera. Some thirteen pages are devoted to the discussion of the relations of the iris to the inner surface of the wound, and the mode of doing the iridectomy. The evil effects which often follow entanglement of the iris in the wound are now pretty well known—such as iritis serosa, tendency to cyclitis, even to suppurative processes in the wound, and the ulterior ill effects of slight herniæ iridis. To avoid these mischiefs, great care must be given to the iris excision; to do it by three or four cuts of the scissors pressed down on the sclera, the angles to be cut clean, and if iris remain in the wound, to procure its return by pressing on the eye by the rubber spoon or even pushing it back by the cystitome. The tension of the globe has a great influence on this condition—and for this reason chloroform confers advantages. Graefe says that now he uses chloroform about once in twenty times. He incidentally remarks that at this time (about September, 1868), he had done this kind of extraction about eight hundred times.

The conclusion of the article relates to other cases where the peripheral section is desirable—but these are now pretty well understood.

Art. 173.—*Extraction of Double Cataracts with Closed Pupils, and Recovery of Good Sight, after Thirty Years' Total Blindness.*

By J. Berncastle, L.R.C.P. Lond., and L.R.C.S. Edin.

(*Australian Medical Gazette*, October 15, 1869.)

The following case was read before the Medical Association of Victoria, 10th September, 1869:—

"Four years ago a blind beggar, constantly stationed at the corner of one of the streets of Sydney, attracted my attention; and, out of curiosity, I went into the particulars of his case, the history of which was as follows:—His name was William McAndrews, aged sixty years. Had formerly been a fiddler; but having completely lost his sight for thirty years, he had ever since remained a blind beggar. On examination I found that both pupils were closed permanently to the size of a pin's head, through which small round aperture a hard cataract of a pearly colour was distinctly visible, in close contact with the iris of each eye, both which, to all appearance, were quite natural, but permanently contracted, not being affected by a strong solution of atropine. He could not distinguish light from darkness during the last thirty years. When he first went blind, loss of vision came on in a few months' time in both eyes, probably from iritis, followed by opacity of the lenses. Considering the case a very interesting one, to test the possibility of restoration to sight after so long a period of total darkness, longer by twenty years than I had ever met with, I volunteered, at his request, to operate. As he was quite unable to support himself in doors, I had to keep him for a month at my own expense, which I should have had much reason to regret, as he turned out very unthankful and intemperate, had not the success of the case amply compensated me for the trouble.

"The operation was performed in the following manner, without chloroform, on both eyes at the same time:—With Beer's knife I made an incision to the extent of one-third of the lower part of the cornea, through which a large iridectomy, of about a quarter of the lower part of the iris, was made with the forceps and curved scissors; the iris had formed no adhesions, but left a fine, large, square pupil in each eye, without any pain or even tinge of blood. At this stage I applied gentle pressure with the finger on the upper part of the eyeball, when to my great delight and surprise, each cataract came out perfect, with its capsule entire. The lenses, having been embedded, quite detached, in the aqueous humour, gave no trouble as I might have apprehended, in the extraction; since, without requiring the introduction of any instrument to lacerate the capsules, they both came away on the simple application of gentle pressure from above.

"The eyes were kept closed with strips of plaster, as is usual for a week, when, on examination, both corneal incisions were found quite healed, without any bad symptom, and in another week, on testing for sight, he could distinguish most objects around him. At the end of a month he could see everything in the room, describe minute objects, and find his way about the town by himself.

"This case is singularly interesting and instructive, as it proves that no lapse of time will prevent a successful operation for cataract, if amaurosis has not occurred from such total occlusion of light for so long a period, which I might reasonably have been led to expect here more or less. Even in such cases, I have seen the stimulus of light ultimately overcome, after a few months time, the amaurosis that accompanied cataract with closed pupils of long standing. I have frequently operated, after from eight to twelve years of total blindness, and have found the amaurosis yield gradually to the altered condition of the eyes. In all

these cases of long standing I consider it a particularly favourable symptom that the lens should escape with its capsule unbroken, a circumstance which gives to the operator great facilities, and to the patient the advantage of a clear medium suddenly, without any risk of capsular interference during convalescence. Another case in point is that of the late Dr. Baylie, of Geelong, who had been totally blind from cataract of one eye for the last 23 years, when, in 1867, I operated on him for extraction of the cataract; and half an hour after it had been removed, he could distinguish the time upon the white face of a Geneva watch."

ART. 174.—*A Method of dressing Eyes after Cataract Extraction, and other Ophthalmic Operations requiring Rest by Exclusion of Light.*

By G. R. AGNEW, M.D., of New York.

(*Transactions of American Ophthalmological Society for* 1869.)

The method consists in closing the lids, as was formerly done, by strips of isinglass-plaster, and then covering the middle portions of the face by a square patch of black silk, which is held in position by strips of plaster pasted on its edges. Stress is laid very properly on the advantages of treating patients in light rather than in dark rooms. The abandonment of pressure in dressing operated eyes is not in accordance with the recent efforts of ophthalmic surgeons; the plaster-dressing has long been practised, and, to a great extent, has given place to the flannel, or equivalent elastic bandage.

Not to remove the dressing until the expiration of five days, as the author says is his common practice, implies a confidence in the intelligent co-operation of the *vis medicatrix naturæ* with his surgical efforts, which few surgeons enjoy. A remonstrance against "the meddlesome officiousness of a peeping pathologist" would be more forcible could we know how frequently the author encounters membraniform obstructions of the pupil with or without adhesions of the iris after extraction. Most surgeons regard it very important to secure an early dilatation of the pupil, so, as far as possible, to avoid adhesions with portions of lens matter, which, because often transparent, may be left in the eye and become a nucleus of capsulitis or iritis.

ART. 175.—*Injury of Left Eye from Foreign Body; Twenty-six Years afterwards Sympathetic Inflammation in the Right; Extirpation of the Injured Eye, followed by very rapid Recovery of the other.*

Under the care of Mr. SOELBERG WELLS.

(*The Lancet*, December 18, 1869.)

The following case is of special interest in two respects:—First, on account of the length of time which elapsed between the injury of the

left eye and the sympathetic mischief in the other; and secondly, the great and rapid improvement which followed the excision of the injured eye.

J. K——, aged forty-two, ironfounder, applied at the Royal London Ophthalmic Hospital, Moorfields, on March 2nd, 1869. The left eye had been lost twenty-six years ago, through an injury from a piece of metal. The globe is now shrunk to about a quarter of the normal size, and is very painful on pressure. The right eye remained perfectly well after the accident, until 1860, when it was attacked with iritis, for which an iridectomy was performed at that time; it being, however, deemed unadvisable to do anything to the left eye. Since the iridectomy in 1860, he has been able to follow his occupation up to last Christmas (1868), when the right eye again became inflamed, and its sight gradually failed more and more.

On March 2nd, 1869, the right eye presented the following symptoms: The eye-tension is normal, the field of vision complete, but the sight so much impaired that he cannot decipher letters of No. 20 of Jaeger's test-types, but only see their black outline. The cornea is somewhat hazy, the iris inflamed, the pupil clouded, and with the ophthalmoscope, hardly any reflex could be obtained from the fundus. The left eye had become irritable and painful about three weeks before, and was very *tender to the touch*. Atropine drops and warm fomentations were prescribed; but as the condition of the right eye was but little improved, the extirpation of the left was strongly urged by Mr. Wells, and the patient submitted to its removal on March 19th. A piece of iron was found in it, firmly embedded in a mass of exudation matter (on the inner side of the sclerotic), in the centre of a firm, fibrous cord, which appeared to be the shrunken and disorganized retina.

March 23rd.—The right eye has improved so much since the extirpation of the other four days ago that the patient is now able to read words of Jaeger 16. The inflammatory symptoms have greatly subsided. The cornea and pupil are clearer. There is still, however, but little reflex from the fundus.

30th.—Reads words of Jaeger 10. The refracting media are much clearer, and the outline of the optic disc can be distinctly seen with the ophthalmoscope.

The patient ceased to attend the hospital after this date, but returned home to Yorkshire. He writes, however, in the middle of October, that his right eye is strong and well, and its sight so much improved that he is able to follow his employment as superintendent of an iron forge.

Clinical Remarks by Mr. Wells.—Injuries from foreign bodies—*e.g.*, splinters of steel, glass, gun-caps, &c.—which have become lodged within the eye, are a very frequent cause of sympathetic mischief. Inflammation of the iris, ciliary body, and choroid may supervene upon the injury, producing subsequently atrophy of the eyeball, which may shrink down to a small shrivelled stump. But even then the danger of sympathetic inflammation in the other eye, if this has hitherto escaped, is not past; for these stumps, which contain a foreign body, are a source of constant risk as long as they *remain painful to the touch* and show signs of irritability. Many years may elapse after the injury, and the wounded eye be free from all inflammation, and be perfectly

quiescent, when suddenly it becomes irritable, and symptoms of sympathetic irritation or inflammation show themselves in the other. In such cases the only remedy is the immediate extirpation of the injured eyeball; indeed, it is wiser to remove it at once after the injury, if its sight is lost, or very greatly and irremediably impaired, more especially if a foreign body is lodged deeply within the eye, or the patient resides at a distance from medical aid, so that a careful watch cannot be kept over him, and the first symptoms of sympathetic mischief at once detected.

Art. 176.—*Report on the Use of Setons and other Counter-Irritants in Diseases of the Eye.*

Opinions of Authors.

(*British Medical Journal*, December 18, 1869.)

Mr. Morgan writes: "Counter-irritation is useful in chronic ulcer of the cornea."

Mackenzie, under the head of "treatment of strumous ophthalmia," speaks strongly of the value of blistering in intolerance of light. The most "painful, but not the least effectual position," is the nape of the neck. In general the discharge should be kept up. He says that the use of tartar emetic ointment is much more painful, and causes more disturbance than blistering. He quotes Dr. Salomon's statement, that the tartar emetic eruption is the only sure remedy for intolerance of light.

"Issues in the neck or in the arm were at one time much employed, and certainly proved beneficial in relieving symptoms of phlyctenular ophthalmia, and in preventing relapses. They were in many respects, however, objectionable. I have known an issue in the arm to cause atrophy of the extremity, which continued for life. The improvements which have taken place of late years in ophthalmic medicine have rendered such means less necessary."

In the French edition, painting the eyelids with tincture of iodine is strongly recommended. The application should be made once or twice a day, according to the irritability of the patient and the effect produced. "It is rare for the intolerance of light not to have entirely disappeared in two or three days." The first use of this remedy is attributed to Furnival. M. Hays recommends, with the same end in view, the application of a stick of nitrate of silver to the eyelids.

Tyrrell (vol. i. p. 53), under the head of counter-irritation, recommends a liniment of ammonia to be rubbed in above the eye; but this is open to the objection that some of the liniment may run into the eye. He recommends also mustard-plasters; also tartar-emetic plaster. The mode of applying this he describes in detail, and says that this plan "affords the means of keeping up almost any degree of irritation without much suffering to the patient." Blisters, he considers, should be frequently repeated; and in children, muslin should be placed next the skin. With reference to issues or setons, he says: "I have for many years abandoned the employment of these means. I am satisfied that

they accelerate recovery in some cases when placed near the affected organ; but I am also satisfied that disease cured by such means is very prone to reappear when the remedy is withdrawn; whilst the more tedious cure without such assistance is more permanent and complete." In some scrofulous children he was in the habit of employing an issue in the arm, near the insertion of deltoid. "The counter-irritation in such cases should be continued till the age of puberty becomes manifest."

Dr. Copland quotes Mackenzie's recommendation in chronic cases of "scarifications of the eyes and lids." "In older children, blisters behind the ears or on the nucha are serviceable; but they ought to be removed in five or six hours."

Mr. Dixon recommends strongly the use of blisters in strumous ophthalmia to relieve the intolerance. "They should be about the size of a shilling, and should be removed at the end of five or six hours." He states that sometimes tincture of iodine, painted on the eyelids twice a week, will be even more efficacious than the blisters.

Bader, under the head of "strumous ophthalmia," says "the insertion of a seton into the skin of the corresponding temple hardly ever fails to remove the intolerance of light. The application of the tincture of iodine to the skin of the eyelids twice a week should be used if the seton be objected to." "The fact that the insertion of a seton alone removes within the shortest time the troublesome symptoms of most cases of vascular corneitis, provided the cause be not seated in the conjunctiva of the lids, must not be lost sight of when considering the effects of internal remedies." At page 165, are given detailed directions as to the mode of inserting a seton in the temple. It should lie in front of, and somewhat parallel with, the artery. The hair will fall down over it and hide it. "The seton should be moved to and fro once daily." "The seton is of the greatest use in opacities, pustules, and ulcers of the cornea, when accompanied by spasmodic closure of the lids, increased vascularity, lacrymation, and intolerance of light where granulations of the conjunctiva are not present simultaneously." "It may be inserted at any age, and is in hospital practice almost the sole remedy adopted for the rapid removal of the disturbances accompanying the above-mentioned corneal changes."

Macnamara recommends counter-irritation in syphilitic keratitis.

In a communication to the Clinical Society, Mr. Spencer Watson advocated strongly the use of the seton in ulcers of the cornea, and adduced four cases. He also alludes to notes of thirteen cases in which he considered benefit to have resulted.

Mr. Hulke, in the course of the discussion afterwards, deprecated the use of setons as too severe, and recommended atropine and tonics.

Mr. Wordsworth, who has we believe not published on the subject, but whose opinion will be much valued, has stated to us that he does not use setons very extensively, but that, "in certain selected cases of obstinate corneal ulceration, they produce wonderfully good results."

Under the head of "chronic vascular ulcer of the cornea," Mr. Lawson advises that all applications to the eye should be discontinued for a time, and a double silk thread seton be inserted into the temple. He directs it to be put high up amongst the hair out of sight, and out of

the way of the branch of the temporal artery. "The seton should be worn for three or four weeks, and may be continued longer if beneficial, and if it does not excite too great irritation."

Mr. Soelberg Wells says: "In the treatment of fascicular corneitis" (a peculiar and very rare disease), "a seton in the temple sometimes proves of much benefit." He also quotes Mr. Critchett's plan of treating vascular ulcers of the cornea by seton. About an inch of skin is to be taken up. The silk is to be moved daily. "The seton continues to discharge for two or three months—sometimes for twelve months."

Scepticism as to the advantages of counter-irritation is, we believe, at present a characteristic of the German school, and has possibly to some extent spread amongst ourselves from that source. The following quotation from Stellwag von Carion will, we believe, fairly indicate the general creed of his countrymen.

"The aim of counter-irritation is to withdraw blood from the original seat of inflammation, and to lessen lateral pressure. This can, however, last only a short time. The effect is evanescent.

"The advocates of this method of treatment may, perhaps, have observed this, and support their views on the possibility of a resolution in an antagonistic way. Unprejudiced observers have not been able to discover any such effect in eye-diseases; but the profession has been compelled to call these remedies instruments of martyrdom, which do no good in any case, but often do more harm than the original disease. All this is true of moxas, setons, and issues. Exhaustive suppuration, and even erysipelas terminating fatally, are the possible consequences of the use of these agents. The pustules, from the use of tartar emetic ointment, cannot be much better spoken of. Even euphorbia plaster is dangerous, especially in persons with a soft skin and in children. Extensive impetigo and eczema not unfrequently arise in consequence of counter-irritation applied behind the ear, or in the temporal region. We also very often see the cervical glands swollen, and even suppurating, as a result of the same treatment. The ulcerated part may also be scratched by the patient and the matter brought into contact with the eye."

In the fourth volume of the *London Hospital Reports*, Mr. Hutchinson expresses the following opinion: "I have of late years formed a still higher opinion of the efficacy of setons in the treatment of certain chronic inflammations of the cornea . . . . . Chronic ulcerations of the cornea, attended by much intolerance of light, are the cases which require them. I think the degree of intolerance and irritability measures the necessity for their use. In the early stages of corneal ulcers, they are less decidedly useful than in the later ones; but my impression is that in these they often prevent a case from advancing to a worse stage. They never do harm and they cause very little pain. I have used them frequently for infants and for cachectic 'strumous' children. The result usually is that within a week the local irritability ceases, the fevcrishness abates, the appetite returns, and the strength begins to improve. The seton should consist of two threads of thick silk, and should be put into the temple amongst the hair, so as to leave no exposed scar. They are more decidedly useful where only one is involved than when both suffer. They do no good in syphilitic keratites, nor in cases which are accompanied by granular lids."

Art. 177.—*On Counter-Irritation in Eye Disease.*

By Furneaux Jordan, F.R.C.S.

(*Medical Press and Circular*, February 16.)

Dr. Furneaux Jordan says that counter-irritation is the great remedy for inflammatory disease of the eye. As a rule, gonorrhœal, or purulent ophthalmia or ophthalmia neonatorum may be checked instantaneously by a broad horse-shoe of smart counter-irritation to the forehead, temple, and cheek; and acetum lyttæ, arg. nit., or iodine, may be used. The treatment is much more certain and rapid than any nitrate of silver treatment, however carefully conducted.

Art. 178.—*Epithelioma of the Lip.*

Under the care of Mr. Erichsen, at the University College Hospital.

(*The Lancet*, February 12.)

On January 26th Mr. Erichsen operated on a man who presented over the lower lip, near the right angle of the mouth, a suspicious-looking ulcer seated on an extensive and very hard base. The patient was thirty-two years of age, robust and active, and had previously had good general health. There was no broken tooth near the disease to cause irritation of the lip, and the patient had not been in the habit of smoking a clay pipe unguarded at the end by sealing-wax. Some short time before the appearance of the ulcer the man had received a blow from the fist on the lower lip.

In this case there were two points of great interest and importance. One of these bore upon the question of the nature of the disease, as the age of the patient and his healthy appearance suggested that the ulcer upon the lip might be due to syphilis rather than to any malignant affection. On inquiring into the previous history of the case, it was found that a chancre, with syphilitic disease, had been contracted about eighteen months previously. But, as was stated by Mr. Erichsen in some remarks made in the theatre, though primary syphilitic sores are not of unfrequent occurrence, an indurated ulcer during the stage of secondaries is very rarely, if ever, observed. This point, together with the fact that the patient did not present at the time of his admission any cutaneous eruption or other superficial lesion of a syphilitic nature, led Mr. Erichsen to conclude that the ulcer was due to cancroid disease or epithelioma; and, as it was extensive, and also very unsightly, an early operation for its removal from the lip was decided upon. An enlarged and indurated gland was situated just below the ulcer, near the inferior border of the lower jaw. And the second point of interest in the case consisted in the bearing of this symptom upon the question of operative interference. Mr. Erichsen holds that excision of a cancroid growth is not contraindicated by the presence of an enlarged gland. The gland may subsequently become reduced in size, and, if the

enlargement persists, can readily be removed by a second operation. In this case the ordinary operation for removal of malignant disease was performed: a large V-shaped portion of the lower lip was excised, and the raw edges were brought into contact by means of needles and twisted sutures. In operations for epithelioma it was necessary, Mr. Erichsen stated, to cut far from the disease; in the lower lip this could be done without fear, as the parts in this region are so freely movable that the edges of the wound might be brought together with ease, even after the removal of as much as half the lip. Union is generally perfected in a very short time, and on the fourth or fifth day the needles may be removed. In some concluding remarks, Mr. Erichsen asserted that, from his own experience, both in hospital and private practice, excision of epithelioma was the most satisfactory of operations for the removal of malignant disease, as this proceeding, in some instances, is not followed by a return of the disease, and in most lengthens life, and materially increases the comfort and well-being of the patient. Many cases had been under his notice in which, though the operation had been performed many years previously, there was no return of the disease. In some of these cases the knife had been used notwithstanding the presence of enlarged glands.

Art. 179.—*Operations for removal of Epithelial Cancer of the Tongue.*

(*The Lancet*, April 9.)

The following notes of three recent cases of lingual epithelioma, in all of which the disease was removed in the operating theatre, seem to be of some practical interest, as in each instance a different operation was performed. Although there is still much diversity in the practice of eminent hospital surgeons with regard to the removal of cancerous growths from the tongue, it is evident, from the clinical remarks made on these cases, that two important points in connexion with the operation have been pretty well settled, through the results of extensive experience. In the first place, an immediate and rapid removal of the disease is to be preferred to the application of the ligature, which is a tedious and by no means a safe proceeding. Secondly, the écraseur, even when slowly and cautiously used, cannot be relied upon as a preventive against profuse hæmorrhage. With regard to the administration of an anæsthetic during the removal of the cancer opinions still differ. In Sir William Fergusson's case, although the disease was extensive and the operation painful and severe, chloroform was not given. It is a somewhat singular fact that in three cases operated upon in the course of five weeks, all the patients were females. Mr. Paget states that a large majority of the cases of epithelial cancer occur in males; and that in 105 cases affecting parts common to both sexes, 86 were in men and 19 in women.

King's College Hospital.—Removal of large Epithelial Growth from the right side of the Tongue.—The patient was a sallow woman, fifty-seven years of age. The growth on the tongue had been noticed for two

years. It formed a large nodulated and ulcerating mass, occupying nearly the whole of the right half of the tongue, with the exception of the apex and posterior part. On Saturday, March 18th, the patient was brought into the theatre. She was seated in a chair, not being placed under the influence of chloroform. Sir William Fergusson at once seized the apex of the tongue with broad-bladed and toothed forceps, drew the organ well forwards, and then removed the whole of the disease with one sweep of the knife. Profuse arterial hæmorrhage followed the operation, most of which quickly ceased, one vessel only requiring ligature. Sir William, in some subsequent remarks, stated that the use of the écraseur, in his opinion, caused more pain, and was attended by quite as much hæmorrhage as that of the knife. The sharp and rapid stroke of the latter instrument was to be preferred to the slow process of strangulation produced by the écraseur. With regard to the hæmorrhage attending the operation, he had frequently noticed that this, though very profuse immediately after the use of the knife, soon ceased spontaneously, and that when the surgeon had commenced to take up the bleeding arteries scarcely any would be found requiring the ligature. In the present case, although the bleeding at first seemed very copious, he waited for a short time before attempting any active means to arrest it. The flow of arterial blood in this case rapidly diminished, but one large vessel required the application of the ligature —a proceeding, according to Sir William, by no means so easy in the region of the tongue as one might at first suppose.

Guy's Hospital.—Removal of Epithelial Growth from Tongue by the Galvanic Cautery.—On Friday, March 11th, Mr. Hilton operated for the removal of a small epithelial cancer, seated on the right side of the tongue, near the apex. The patient was a woman about thirty-four years of age. The tumour was first isolated by passing three needles under its base through the healthy tissue of the tongue. Beneath these pins was fixed a loop of platinum wire in connexion with an écraseur. Junction was next made between the loop of wire and a powerful galvanic battery; and, by screwing the écraseur, the growth was removed from the tongue. Before the operation, Mr. Hilton stated that he preferred this to other methods for removing lingual cancer. The ligature was painful and tedious, caused sloughing, and subjected the patient to the risk of pyæmia. The knife acted efficaciously and rapidly; but its use was occasionally followed by dangerous hæmorrhage. The écraseur gave great pain, was very slow in its action, and frequently caused as much hæmorrhage as the knife. The galvanic cautery acted quickly in removing the growth, was attended with but little hæmorrhage, and occasioned no very great sloughing. It could be applied very readily to the diseased parts. The galvanic cautery used in this case was the instrument invented by Middeldorpf, of Breslau. In the *Lancet* of May 1st, 1869, several instances of its use in surgery are reported from the practice of Mr. Bryant, who introduced this instrument into Guy's Hospital.

University College Hospital.—Removal of the Tongue by the Submental Operation.—The patient in this case was a woman of advanced age, who had been admitted into the hospital under the care of Mr. Erichsen. The back part of the tongue was occupied by an ulcerated epithelial

growth, the right side of the organ being chiefly involved. On Wednesday, February 16th, the following operation was performed. The patient having been put thoroughly under the influence of chloroform, Regnoli's T-shaped incision was made under the chin, the first cut being made from the lower edge of the jaw, along the mesial line, to the hyoid bone, and the incisions on either side along the inferior margin of the lower maxillary bone. Two flaps, formed of skin and subjacent muscular tissue, having been dissected out, and turned outwards and downwards, and the insertions of the hyoid and lingual muscles to the lower jaw divided, the tongue was dragged downwards through the large submental opening thus formed. The chain of an écraseur was then applied around the base of the organ, and slowly tightened by intermittent movements of the screw. After the removal of the tongue there was considerable arterial hæmorrhage, and a ligature had to be applied to the left lingual artery. Mr. Erichsen, after the operation, stated that, with regard to hæmorrhage, the écraseur was a very uncertain instrument, being frequently followed by very little bleeding, but occasionally by a great loss.

The patient had an attack of erysipelas after the operation, but afterwards did remarkably well. On March 16th, one month after the operation, she was in a state of convalescence.

Art. 180.—*Pendulous Pedunculated Bronchocele successfully Removed.*

By George C. Blackman, M.D., Professor of Surgery in the Medical College of Ohio; Surgeon to the Cincinnati Hospital and to the Samaritan Hospital, &c.

(*American Journal of the Medical Sciences*, January.)

Dr. Blackman submits the report of an operation which he performed at the Samaritan Hospital during the past winter, believing that the plan adopted is worthy of imitation in similar cases. The details of the case were furnished to Dr. Blackman by Dr. De Courcey, one of the resident physicians of the institution.

Frederika Ruckdaschel, German, æt. thirty-six, unmarried, was admitted February 26th, 1869. She was of fair complexion and had always enjoyed good health. There was an enlargement of the thyroid gland on the right side, which had existed for fifteen years. It had never given her much annoyance, and it was only on account of the unsightly deformity that she urgently requested its removal. The tumour was of an oblong shape, about three and a half inches in length, and four inches in circumference, looking much like a banana. In the presence of the class of the Medical College of Ohio, and assisted by Dr. Glover Perrin, U.S.A., and others, I divided the integuments over the most prominent portion of the tumour, so as to completely expose the morbid growth. With the handle of the scalpel and fingers the tumour was completely isolated, with but trifling hæmorrhage, until its base was reached. The whole mass was then suddenly wrenched from its connexions, and for a few moments the hæmorrhage, both from the superior and inferior thyroid arteries, was truly appalling. A sponge

was quickly thrust into the wound, but was saturated at once, when it was withdrawn, and pressure with the fingers was made directly upon the bleeding vessels. In the course of a few minutes a sponge was again inserted to the very bottom of the wound, whilst another was applied directly over it, and retained *in situ* by means of a needle, which transfixed the lips of the wound, and the twisted suture. The hæmorrhage was now arrested and the patient placed in her bed with the injunction to keep the head and neck as quiet as possible. The sponge nearest the surface was removed on the 2nd of March, six days after the operation, but the other was allowed to remain until the 8th of March, the offensive odour having been corrected by a solution of carbolic acid. The wound, which was of great depth, healed with but little suppuration, and the patient left the hospital entirely cured on the 22nd of March.

Dr. Perrin, who was the first to inspect the extirpated tumour, called attention at once to the fact that it embraced not only the isthmus of the thyroid, but also the left lobe, which was somewhat atrophied. The disease was simply hypertrophy.

Art. 181.—*On Catheterism of the Larynx.*

By Dr. Weinlechner.

(Communicated to the *Gesellschaft der Aerzte of Vienna.*)

In this paper Dr. Weinlechner discusses the subject of catheterism of the larynx, that is, the introduction of tubes into the trachea, which has been frequently carried into practice by this physician in cases of croup.

Dr. Weinlechner in his first attempts at catheterism of the larynx used a simple elastic catheter, to which, by means of a thick piece of iron wire, a corresponding bend had been given, the wire being bent at its outer end to facilitate manipulation. From the catheter thus formed the wished-for benefit was not always derived, on the contrary, the dyspnœa frequently increased after its use, especially when the detached false membranes could find no exit through the spasmodically contracted glottis. The deterioration was sometimes so great that there was urgent necessity for recourse to tracheotomy. For this reason Dr. Weinlechner then made use of an obliquely truncated elastic catheter into which another smaller catheter could be passed by means of a director. Acting on the same principle, Weinlechner obtained tubes of caoutchouc, varying in thickness, and each provided with a funnel-shaped mouth-piece. Through each of these tubes, which were opened at either end, was passed during its introduction into the larynx a piece of gum elastic catheter which projected beyond the inner end of the tube. This catheter was removed as soon as the caoutchouc tube had been passed into the interior of the windpipe. These caoutchouc tubes serve their purpose much better than those first used, because after the introduction of one of them the false membranes can be expelled, which process is accomplished with greater difficulty through tubes provided only with lateral openings.

Dr. Weinlechner next describes the proceeding of laryngeal catheterism. With refractory children the teeth are first separated by means of a bone spatula or of a wooden wedge. When the resistance is especially great Dr. Weinlechner uses his own dilator, by the aid of which the orifice of

the mouth is at the same time enlarged. Whilst, when the child is refractory, the head, hands, and feet are confined, the elastic tube is passed into the trachea under the guidance of the operator's left index finger, which at the same time depresses the back of the tongue; the elastic catheter, which has served as a conductor, is then withdrawn.

The successful performance of catheterism may be known by the violence with which air passes through the tube and by the expulsion of false membranes: a feeble stream of air, however, may be observed when the catheter is passed only into the pharynx or the commencement of the œsophagus. In doubtful cases the performance of laryngeal catheterism may be determined by the introduction of the finger or by making with the catheter a lateral movement, which is followed by the larynx if the instrument has passed well beyond the glottis. Dr. Weinlechner has never observed any injury to the larynx from the catheter.

Catheterism of the larnyx is, according to Dr. Weinlechner, next to tracheotomy, the most certain and most rational symptomatic method of cure in attacks of suffocation in the course of croup and diphtheria. After its performance the dyspnœa generally ceases, the lividity of the face gives way to the natural colour, and the lost consciousness and perception again return. In many cases repeated laryngeal catheterism renders tracheotomy superfluous, and a cure is produced without the performance of the latter operation; in several other cases catheterism enables the surgeon to put off tracheotomy for two or three days, the respite thus obtained being of infinite importance in private practice, since in the meantime precautions may be taken to procure assistance for the operation or to move the patient to a convenient place. Laryngeal catheterism is stated to be *the natural precursor of tracheotomy;* the patients and their friends are strengthened thereby in their reliance upon mechanical means of assistance, and, when the former proceeding is no longer of use, assent more readily to the performance of the sanguinary operation. When tartar emetic—of the abuse of which one must often enough be convinced—can no longer excite reflex movements, the introduction of the caoutchouc tube will often, without causing any damage, cause much coughing and profuse expectoration. So long as there is no important dyspnœa expectoration may be promoted by sweeping out the back of the mouth with the finger covered or not by lint. That which is accomplished by tartar emetic and similar medicinal agents—viz., vomiting, and thereby cough—may be produced without any hurtful chemical action simply by this mechanical method, which has been used for a long time by accoucheurs in cases of asphyxia of newly-born infants.

Although Dr. Weinlechner has accumulated his experiences of laryngeal catheterism in the first place from cases of croup, he still has no hesitation in advising the proceeding in the following cases:—

1. For œdema of glottis either without or after preceding scarifications.
2. For threatening suffocation from profuse secretion in the lungs.
3. For asphyxia of newly-born children; air to be blown in through the tube, and the secretion to be sucked out.
4. For laryngeal spasm in children or hysterical women.
5. For foreign bodies moving up and down in the trachea, and the

exit of which is prevented not so much by their size as by the production of spasm of the glottis through the constant irritation of the vocal cords.

6. For strictures of the larynx without or after previous incision.

7. Laryngeal catheterism may, according to Dr. Weinlechner, be applied for arresting hæmorrhage after the extirpation of polypoid growths. In cases of this kind a piece of sponge is to be fastened to the outer surface of the tube.

8. Catheterism may be performed for the purpose of introducing medicinal agents into the lungs, as for instance, lime water and lactic acid in cases of croup. Where these agents are not otherwise useful, they may yet excite cough and produce expectoration.

9. In cases of asphyxia during chloroform narcosis when elevation of the patient and dragging forward of the tongue have proved of no avail, the introduction of a tube into the larynx and the insufflation of air is to be preferred to the operation of laryngotomy.

10. If asphyxia should come on during the performance of tracheotomy and the operator not think it advisable at once and without preparation, to cut through all the soft parts, a tube may with advantage be passed into the larynx, so that whilst it remains there and the respiration is carried on regularly, the operation may be perfected more quietly and with greater care.

For the insufflation of air through the laryngeal catheter, Dr. Weinlechner recommends the surgeon to use his own breath, and to drive out the air again by compressing the patient's thorax. This method is more simple than insufflation by means of a bladder or bag, but still there is, in applying it in cases of diphtheria, a risk of infection.

Art. 182.—*A Temporary Tracheotomy.*

(*British Medical Journal*, December 25, 1869.)

In number 47 of the *Aertzliche Intelligenz-blatt* for the year 1869, Professor Nussbaum of Munich remarks, that there are three sources of danger in operations involving the cavity of the mouth, such as the extirpation of the superior maxilla, or of tumours springing from the base of the cranium—namely, 1. Suffocation from blood flowing into the larynx; 2. Pneumonia from small coagula of blood in the lungs; or 3. Injury to the throat, and subsequent deep-seated abscesses in the cervical fascia, from the assiduous mopping-up of the blood during the operation. To obviate these dangers, he proposes a preliminary tracheotomy, and narrates a case in which he removed a large tumour (sarcoma) of the upper jaw, which had pushed the eye upwards, and extended deeply backwards and downwards into the throat. The patient was a country girl, aged twenty, much weakened by repeated hæmorrhages. He first opened the trachea, and introduced a silver canula, continued the inhalation of chloroform through this, closed the glottis and pharynx with four thicknesses of oiled linen, proceeded to remove the whole upper jaw and tumour, and then applied the actual cautery. Having washed out the mouth and plugged the cavity left by the operation, he

took away the oiled lint and the trachea-tube, and closed both wounds. The patient breathed freely through the normal channel, and the whole operation seems to have been a complete success. Not a drop of blood entered the throat; and the operator was free from all fear of his patient's dying of suffocation.

Art. 183.—*On Ulceration of the Internal Carotid Artery in Caries of the Petrous Portion of the Temporal Bone.*

By M. Jacques Jolly, of Paris.

(*Archives Générales de Médecine*, Mars, 1870.)

This memoir forms a complement to one published by M. Jolly in the year 1866. Four fresh cases have been collected in which the carotid artery was perforated in consequence of caries of the temporal bone. A fifth case is given of hæmorrhage from the middle meningeal artery through ulceration.

M. Jolly offers some remarks concerning the mode of the perforation of the carotid artery in caries of the petrous portion of temporal bone. In his former memoir he suggested two kinds of mechanism. In one he thought that a moveable, irregularly-shaped osseous lamella, with edges more or less sharp, might be pushed with violence against the artery during some effort on the part of the patient, and that the walls of the vessel, even when healthy, might be thus perforated mechanically. This, however, he believed to be quite an exceptional cause.

This view was afterwards combated by M. Duplay, whose reasons seemed to be so conclusive, that M. Jolly did not hesitate to abandon it. The second mode of perforation, according to M. Jolly's original views, consisted in the influence exerted by a small sequestrum striking against the walls of that part of the artery retained in the osseous canal. M. Jolly does not deny the existence of inflammation and ulceration, but thinks that because the carotid more than any other artery is the seat of those processes there is some special cause which excites them. This cause, he states, is the presence of a sequestrum, which, by its continuous pressure upon an artery which cannot escape from it, imprisoned as it is in an osseous canal, and by the friction it performs at each wave of blood, wears away and lacerates the arterial walls with which it is in contact. The all-powerful influence of this cause is proved by the fact that the inflammatory process, far from extending to every part of the artery which is bathed in pus, remains limited to a very restricted part which in most cases answers exactly to the dimensions of the sequestrum in a case reported by Santesson. The wall of the internal carotid artery, at its angle of flexion, was reduced in thickness to such an extent that it was readily torn through on the introduction of a sound.

Santesson's case, M. Jolly points out, is very important, in that it shows that the middle meningeal or one of its branches may become ulcerated and give rise to hæmorrhage equal in importance and gravity to that proceeding from perforation of the internal carotid. Hence it is impossible to recognise with certainty from which of these two

arteries the bleeding takes place, so that the surgeon should always have under his notice the possibility of an error and be guided thereby in his choice of the artery for deligation.

M. Jolly concludes his memoir with the following remarks on treatment :—

"I have established, in opposition to the opinion of MM. Baizeau and Genouville, and basing my opinion on the relative success obtained by M. Broca, that the surgeon ought as an extreme measure to have recourse to ligature of either the common or the internal carotid.

"So far from modifying my convictions on this point I hold that they have been confirmed by the cases related in this contribution. In two out of three cases the common carotid was tied, and though in one case there was complete failure and in another the hæmorrhage persisted and carried off the patient in spite of deligation of both carotids, the third case, on the contrary, in the practice of Mr. Syme, was an example of a thorough cure. Although after the common carotid had been tied on the injured side, the hæmorrhage returned in considerable amount on three occasions, it was at last arrested, and in three months the patient was quite well."

To these three cases is added another successful one previously reported by M. Jolly. The application of ligature of the common carotid was thus followed by success in two instances, by failure in the remaining two. This proportion, M. Jolly thinks, though not very satisfactory, should still justify, and even encourage the surgeon to practise deligation.

"But although with regard to this point," M. Jolly goes on to state, "my present opinions are the same as they were in 1866, and I am still persuaded that when the surgeon has acquired certainty, or, at least, a very great presumption that an arterial lesion exists, he should proceed to the ligature of the artery furnishing the blood, I do not think the same as to the choice of the vessel.

"In 1866, although I did not pronounce absolutely as to which of the two carotids should be obliterated, I evidently favoured the internal carotid, the constant source in my opinion at that time of the hæmorrhage. But at the present day I think quite the contrary, and hold that it is the common carotid which ought to be tied, not indeed through preference, but through necessity, in all cases of arterial hæmorrhage from the ear.

"The reason of this exclusive choice consists in the fact that the middle meningeal artery," as in one of the reported cases in M. Jolly's memoir, "may be perforated, and that the discharge of blood which results from a wound of this vessel cannot be distinguished from that caused by a lesion of the internal carotid artery. It is necessary then in practising deligation to choose the vessel which answers to both indications, that which in one as in the other case will bring the hæmorrhage to a termination, whether it come from the internal or the external carotid; in short, it is to the common carotid that the surgeon should always apply the ligature. Indeed, this is the artery that has always been tied in cases of pure hæmorrhage from the ear, and in three cases at least the surgeons thought of none other whilst discussing the question of an operation."

(B) CONCERNING THE TRUNK.

ART. 184.—*Clinical Lecture on the Treatment of Stricture.*

By JAMES PAGET, F.R.S., D.C.L.

(*British Medical Journal*, April 2.)

Mr. Paget lectured on two cases of retention of urine with slight stricture, in which the patients had been treated in the first instance by warm bath, laudanum, and rest, without catheterism, the last measure having been reserved until many days after the retention was relieved, and employed for the treatment of the purely organic stricture only. In one of the cases catheterism was attempted on admission, for a short time only, but unsuccessfully; this man had had incontinence of urine for six weeks before he got retention, and yet, after three weeks' treatment, by rest, alkalies, and plain diet, Mr. Paget was able to pass No. 9 without any difficulty into his bladder.

In the other case, retention was complicated by a perineal abscess, which was opened. The man was treated without any attempt at catheterism until the third week, when a single unsuccessful attempt was made; but a few days later Mr. Paget was able to pass No. 6 at once into the bladder. Mr. Paget dilated on the advantages of rest, the warm bath, and opium, in relieving retention, and on the continuance of rest with alkaline medicines and unstimulating diet for the subsequent complete removal of spasm, and of that swelling of the urethral mucous membrane which may not only produce retention, but, as in the first patient mentioned, may cause symptoms closely simulating those of the worst forms of organic stricture. The chronic congestion of the urethral mucous membrane, which probably existed in that patient and caused incontinence, was compared by the lecturer with chronic conjunctivitis and chronic swelling of the nasal mucous membrane.

Mr. Paget considered that the perineal abscess, which formed in the second patient, was probably the result of inflammation in strictures contiguous to the urethra, but without any extravasation of urine. Many of the perineal abscesses formed in connexion with retention were produced in this way, and not, as is commonly taught, by ulceration of the urethra and localized extravasation.

Mr. Paget went on to remark on the morbid sympathies of the urethra, sympathies which were found in no other mucous tract, and were quite peculiar to that over which the urine passed from the bladder. The first of these peculiar manifestations of sympathy with distant parts was the *syncope* which occasionally follows the passage of a catheter, the next was *epileptiform convulsion* from the same cause. Mr. Paget remarked that these two results never happened unless the patient were standing up, just as the same phenomena after excessive blood-letting were noticed only when the patient was in the erect position. Thirdly, *rigor* following the passage of instruments into the bladder was mentioned; this result was commonest in patients who had never been catheterized before, and unlike the other two phenomena, did not come on until water was passed for the first time after the use of the catheter.

Rigor after catheterism was said to be commonest in persons who had ague, or who had lived in tropical countries, and the phenomena of the shivering fit were described as corresponding exactly with the course of an attack of ague. The rigor might often be prevented by the administration of brandy and water or other alcoholic stimulant immediately after the operation; and Mr. Paget spoke in high terms of Sir B. Brodie's practice in this respect.

In referring to the occasionally very dangerous character of these shivering fits, Mr. Paget mentioned that he had known death to follow simply sounding for stone in no less than six cases. As a rule, however, a rigor occurring soon after lithotrity, lithotomy, or the passage of a catheter, was not a dangerous sign. This brought the lecturer to his fourth peculiar sequence of catheterism and lithotrity—viz., the occasional occurrence of pyæmia, after a rigor, apparently from simple irritation of the urethra, and without any injury to its structure or effusion of urine. Mr. Paget then referred to another of these curious relations between the urethra and distant parts, *urethral rheumatism* (including the so-called gonorrhœal rheumatism), an affection which, if it could not be described as pyæmic, yet certainly presented many points of close resemblance to pyæmia.

Mr. Paget was of opinion that any inflammation of the urethra, whether contagious or not, might be followed by the swelling and effusion into the joints which characterizes urethral rheumatism. Lastly, Mr. Paget mentioned the connexion which he believed to exist between certain cases of *sclerotitis*, inflammation of the urethra, and effusion into joints, inclining to the belief that patients in whom these conditions coexisted were often to be described as *gouty* rather than rheumatic.

Art. 185.—*Observations on Lithotomy, and on Certain Cases of Enlarged Prostate.*

By Sir William Fergusson, Bart., F.R.S., Serjeant-Surgeon to the Queen.

(*The Lancet*, January 1.)

In a very able paper on the above subject Sir William Fergusson records some points which have been little noticed, if at all, by the generality of writers on this absorbing subject. "I am the more induced to do so," Sir William writes, "because I have reason to think that some observation on lithotomy in children, made by me in my lectures at the College of Surgeons in 1864, have had good effect. What I then stated was the result of much thought and considerable individual experience. The distance of the neck of the bladder from the perineum, the ease with which the membranous portion of the urethra may be torn across, and the facility with which the prostate and neck of the bladder may be thereafter pushed upwards and backwards, were particularly dwelt upon; and a seemingly correct explanation, as I hope, was given of the frequency of not finding the stone in this operation, as also regarding the conclusion that stone had not actually been present in such

cases,—the real fact being that the operator had failed to reach the bladder. More mistakes of this kind have been made on children than on adults, and experience has convinced me that the difficulties and mechanical dangers are actually greater in children than in the adult. On the occasion referred to, I pointed out the common error of supposing that because lithotomy is comparatively so successful in its results in children, it is easy of performance in similar proportion. Such, however, is in my opinion, not the case; and youth, with the strong natural disposition to reparation of wounds in early years, are the principal reasons for the happy results of this operation on patients under the age of puberty.

"In my experience I have learned something more about the prostate than is usually stated in books about lithotomy, or about that organ itself. Operative surgery and surgical pathology have been largely taught by the pure anatomist, who has had little experience in either subject; and there has been on that account, in my estimation, a large amount of questionable doctrine laid down for the guidance of the practical surgeon. He may, indeed, be years in practice before he can, by thinking for himself, get rid of what I am often disposed to call dissecting-room surgery. I look back with amazement at the amount of writing and so-called instruction as to the limit or want of limit of incisions in the prostate in lithotomy. The healthy prostate, such as it may be considered between puberty and fifty years of age, has usually been taken as the standard of size. In accordance with theories of the teacher or author, a limited incision has been the favourite with one, whilst a free wound through the whole substance has been inculcated by the other. Yet lithotomy is more rarely required during the period referred to than at an earlier or later date. In two-thirds of the cases for this operation the prostate is either below or above the size most generally indicated in these speculations. In early years there can be no doubt that it is either cut or torn throughout; but in advanced years it may be doubted if it ever is either torn or divided entirely, excepting in rare instances, even by those who profess to use the knife freely in this part of the operation. Without proposing at present to discuss the question of free or limited incisions, I am desirous of drawing attention to the circumstance that the lithotomist often deals with the prostate in old men under circumstances very different from those under which it is seen by the pathologist or treated in ordinary practice. The pathologist and practitioner usually look upon the enlargement as a whole, or perhaps with reference to the special enlargement of the middle lobe The one looks to the appearance of the enlarged parts; the other thinks of the effects of these upon micturition, or how, where there is much irritation associated with the condition, he can best and most readily give his patient relief by catheter or otherwise.

"Now, although most formidable cases of stone are often met with in old age without any marked enlargement or change in the prostate, it frequently happens that the lithotomist finds the gland enlarged, and in the ordinary lateral operation his knife, finger, and instruments, pass through the parts where enlargement is almost invariably greatest—viz., the lateral lobe. In the normal state of the prostate, the firm fibrous

structure, as usually seen by the anatomist, can be readily appreciated. Even when there is enlargement, the firm fibrous character may still seem predominant. But in many instances, as the forefinger passes towards the bladder, the sensation is as if its point glided through several rounded bodies in the substance of the gland, which are but slenderly in contact with each other. It is seldom that the pathologist takes this route in examining or displaying the gland, and so perhaps little has been said about this condition. For my own part, although, like others, familiar with the condition, I had never heard any reference to it in association with lithotomy, and it was not until I had some considerable experience in this operation that I perceived the great importance of the fortuitous combination. Repeatedly I had been conscious, during a succession of operations, of feeling, and often too of seeing, this condition. The feeling may be easily understood, but seeing can only be appreciated after explanation. When the stone is being extracted, within the grasp of the forceps, there is often considerable resistance, even when the knife and forefinger have been freely used to give ready passage to and from the bladder. In some instances the stone, whilst all but through the wound, seems to be held *in situ*. If at this time the operator looks carefully, particularly on pushing the skin and margin of the wound a little aside, he will see some tissue or substance between the blades in the space between the hinge and stone. With a slight pressure of the point of the finger this object will disappear from between the blades, and extraction will then seem comparatively easy. This is in reality one or more of the lobules referred to. It has not been grasped between the blades in seizing the stone, but has slipped into the space, as the forceps and stone have been drawn outwards. On such occasions I was glad to let the subject remain without further notice, and I confess to the fear that by referring specially to what I had noticed I might be deemed to have used unwarrantable liberties with the prostate. After repeated experience of this sort, it occurred to me that the propriety of leaving such loosened masses was questionable; and at last, on a tempting occasion, I seized, after the extraction, one or more of these bodies, and partly tore and partly cut them away. To my great delight no evil followed, and the patient, about seventy-five years old, made a most satisfactory recovery, having no special symptoms afterwards.

"In 1848 I exhibited specimens of this kind at the Pathological Society of London, and not long after heard whispers about rough and improper proceedings in lithotomy,—coming chiefly, or rather solely, from those who had rarely, if ever, performed the operation. Criticism of the kind was almost enough to deter from similar pathological information, but I have since followed the practice repeatedly whenever it seemed to me needful, and I have never had occasion to regret doing so. The subject has recently been brought under my notice in a peculiarly interesting manner. During lithotomy on a patient nearly eighty years of age, in whose case my anxiety was special, I recognised this condition of the prostate. There was no peculiarity in the operation, but in extraction I recognised the hitch above referred to. When the stone was extracted I turned my attention to the lower part of the prostate, and found it so loose already that I accomplished its enucleation

with the point of the forefinger of my left hand, with as much readiness almost as if it had been a stone lying loose in the left lobe of the prostate. The circumstances were peculiar, perhaps unprecedented in the history of lithotomy, and I drew the special attention of a professional brother, a near relation of the patient, who was present, to the circumstance. I felt convinced at the time that, whatever might be the result, I did the best for the patient, although his condition was critical in the extreme, and the operation was deemed a last resource. His recovery was slow, owing to previous exhaustion, but there never has been any irritation in the prostate. I do not feel at liberty to mention all the features and history of this case, but I pledge my word and name, for what may be their value, that it is worthy of being a precedent case.

"The thought of being of service to any future sufferer, or any professional brother, induces me to put such experience on record in a manner more forcible than heretofore. The interests of patients and of surgeons are alike involved in these observations; and there are points or questions connected with them which, in my estimation, deserve attention from all engaged in the department of surgery to which the above remarks relate. In many cases of stone in the bladder the distress of the patient is plainly attributable to this cause; but occasionally the presence of stone produces so little irritation that its discovery is a matter almost of chance. Often, however, enlargement of the prostate gives rise to most, perhaps all, of the symptoms and sufferings of stone. When stone is combined with enlarged prostate, who can say from which cause the distress is greatest? So if it happens that the surgeon is called upon to relieve his patient from stone, and finds an enlarged prostate at the same time, why should he not, in extracting the stone, when it seems in his power, as in the cases above referred to, take away a superfluous portion of the prostate at the same time? The masses alluded to seem like adenoid tumours in the original substance of the prostate; their removal may be deemed a relief, and a possible solution of the distress of enlarged prostate; and, as the entire wound in lithotomy most generally closes by granulation, the very removal of such well-nigh isolated masses will leave less surface for inflammation, suppuration, and granulation. If allowed to remain, it is not likely that they will adhere to their former site by immediate union; if they do not, a larger surface must be exposed to the irritating influence of urine, and a double suppurating and granulating surface must be the result.

"But, without speculating on such matters, I hasten to enunciate the conclusion at which this paper aims. There is a certain timidity in the practice of surgery which may in many respects be deemed becoming; and precedents are often as much prized among us as with practitioners in law. There would, however, be no progress unless some one from time to time stepped out of the accredited course; and so, with such authority as I can humbly claim, I have thus ventured to put on record what some of my professional brethren may have hesitated to do, from a fear that they have been guilty, in their operations, of perpetrating some rough mechanism not in accordance with that nicety of manipulation which is thought so essential in the performance of the master handiwork in surgery—lithotomy."

Art. 186.—*Lithotrity and Lithotomy.*

By Holmes Coote, F.R.C.S., Surgeon to St. Bartholomew's Hospital.

(*The Lancet*, May 12.)

In speaking of the relative merits of the two operations of lithotrity and lithotomy, Mr. Coote sees no reason to alter the opinion which he long ago expressed. The former is suited to cases of small calculi, such as may be crushed in one or two sittings. It is especially well fitted for men of full, gouty habit, and in middle life, in whom such calculi may exist in numbers in the kidneys; but when we extend the sphere of this operation to species of larger and harder calculi, patients are exposed to many dangers, especially to that of cystitis, and of even more lasting evil—that of the gradual destruction of the calculus after much suffering, without any relief to the symptoms, owing to changes in the walls of the bladder.

Lithotomy, properly performed, is not in itself so serious an operation as some authors have made it. The last twenty-two cases performed at St. Bartholomew's Hospital have been without exception successful. In unfortunately fatal cases the cause of death is not hæmorrhage, or very rarely so. Mr. Coote cannot recall a case of death from hæmorrhage at St. Bartholomew's Hospital during the whole period that he has been attached to that institution. Neither is extravasation of urine a common cause of death with good operators. But when the kidneys have become diseased, the patient's power of recovery seems wonderfully diminished; and inflammation of the peritoneum is an event which the surgeon justly holds in dread.

Art. 187.—*On the Recurrence of Vesical Calculus.*

By Walter Coulson, F.R.C.S.

(*British Medical Journal*, March 26.)

At a meeting of the Medical Society of London, held February 28, Mr. Walter Coulson read a paper on the recurrence of vesical calculus. Recurrence might occur without reference to the kind of operation; after lithotomy, or after lithotrity. The subject of the recurrence of vesical calculus after operation appeared to have received little attention from English writers. By recurrence was meant the formation of an entirely new stone. The general proportion of recurrence was said to be one in every six cases. It might take place after lithotomy as well as after lithotrity. It was more frequent after the latter operation. The rapidity with which stone was re-formed after lithotomy was something remarkable. The surgeon should pay great attention to the state of the bladder after lithotrity whenever symptoms of vesical disease persisted or supervened. The symptoms usually observed were those of chronic or subacute cystitis. The mechanical removal of the stone generally mitigated the condition of the bladder, but did not cure it altogether. The urine was viscid with ropy mucus, and sometimes contained pus or blood. The chief points to be attended to were, first, to

take care to empty the bladder daily; and secondly, to modify the disordered condition of the vesical mucous membrane. To attain this latter object, Mr. Coulson had found nothing better than washing out the bladder daily with lukewarm water. The following case illustrated the persistence of calculous symptoms after the complete removal of the stone. A gentleman, aged forty, consulted Mr. Coulson in November, 1863. For eighteen months he had suffered severely from vesical irritation. A small phosphatic calculus was found, and was removed in two sittings without any difficulty. The symptoms of vesical irritation soon returned, and continued with their former intensity. They were but slightly modified by treatment, but great relief was obtained by washing out the bladder with lukewarm water. Sir Henry Thompson carefully examined the bladder four different times, without detecting any fragment. The patient was also subsequently examined by Mr. Syme with a like result. In 1865 no improvement had been made; yet the washing out of the bladder still continued to give great temporary relief. The urine contained mucus, pus, and blood, with innumerable crystals of the triple phosphates. Three years afterwards, the patient had gradually and completely recovered, without undergoing any operation. A discussion followed, in which Messrs. Weeden Cooke, Henry Smith, the President, Dr. Broadbent, and others, took part.

Art. 188.—*On the Symptomatic Reflex Neuralgiæ of Gonorrhœal Orchi-Epididymitis.*

By M. Charles Mauriac.

(*Gazette Médicale de Paris*, No. 19, 1870.)

The following conclusions are given at the termination of a long series of articles by M. Mauriac on neuralgic symptoms associated with gonorrhœal epididymitis:—

1. In gonorrhœal orchi-epididymitis two kinds of pain exist: (*a*) local and direct pains due to the inflammatory processes in the epididymis and testicle; (*b*) *reflected, sympathetic, or remote pains* constituting *reflex neuralgiæ.*

2. The reflex neuralgic pains may be dull or lancinating, continuous or paroxysmal; they are manifested in the form of irregularly recurrent attacks. Far from being excited and exasperated by the touch, like inflammatory pains, they are, on the contrary, in the majority of instances, relieved by pressure, and occur spontaneously. They change their situation; and in their mobility occupy successively or simultaneously, not only various parts of the same nerve, but also one or more nerve branches belonging to the same plexus or to several.

3. They do not in their course present the regularity of the organic process to which they owe their origin; they apparently owe to a kind of autonomy which they have acquired, in spite of their original subordination to a fixed lesion, the privilege of manifesting themselves in a peculiar manner,—that is to say, with an unexpected irregularity in their course.

4. The *morbid impression* which gives rise to these reflex neuralgiæ, sets out from the testicle, and extends to the spinal cord.

5. This *incident* impression may or may not be perceptible at its starting-point. When it has arrived at the nervous centre, it produces pathological changes of the functional modality of the nerve-cells. It results from this that along the course of the sensory nerves in communication with these nerve-cells, painful sensations are felt which are produced by virtue of the law of the *excentricity of sensory phenomena*, or of the *peripherism of sensations.*

6. The laws of motor-reflex action formulated by Pflugel, do not apply rigorously to reflex sensation. For instance, painful irradiation reflected by nerve centres may be produced below the point of incidence of the initial morbid impression; it is generally diffused without intermediate obstruction, and as if impatient of all control. With these there is no central point like the bulb for reflex movements, towards which may be propagated from below upwards, and from before backwards, the central impressions produced by reflex sensations. The law of the *generalization of reflex movements* cannot be applied to the *excito-sensory power.*

This power spread in a diffused manner throughout the whole of the grey substance of the nervous centres, is apparently not concentrated in a circumscribed part.

7. In orchi-epididymitis with reflex neuralgiæ, the reflex action may be produced by the side of the viscera by means of the spinal cord, or the ganglia of the sympathetic.

8. The *intensity* of the reflected pain bears no relation to the intensity of the local inflammatory pain. This latter symptom is often insignificant, or has disappeared entirely, when horrible reflex neuralgiæ are manifested at a seat more or less remote from the morbid focus.

9. The radiating pains are diminished in intensity when the reflex action is affected in nerves the origin of which is remote from that of the nerves proceeding to the diseased testicle.

10. Muscular contraction frequently exasperates the reflex pains; but the latter, in their turn, frequently excite morbid and involuntary movements in muscles. With this abnormal conflict between the *virtually* painful nerves of sensation and the motor nerves are associated convulsive twitchings, cramp, contractions, and loss of muscular power, observed in some cases of orchi-epididymitis remarkable for the violence of the reflex pains.

11. When the reflex irradiation excited by a morbid impression setting out from the testicle, acts upon the plexuses of the great sympathetic, there may be produced a collection of phenomena much more complicated than simple pain, such as abnormal peristaltic and anti-peristaltic movements of the digestive tube, gastro-hepatic pains, plenitude or oppression of the general circulation, and consequent corresponding modifications of caloricity.

12. The symptomatic reflex neuralgiæ of gonorrhœal orchi-epididymitis are habitually unilateral, and selected on the same side as the affected testicle; but they are sometimes bilateral, or form a girdle, and are then constituted by a double lumbo-abdominal neuralgia.

13. *Rachialgia* is the most frequent of the reflex irradiations of

orchi-epididymitis; it has a double focus: one, superior or *renal*, the other, inferior or *sacro-sciatic*.

14. Next comes the *lumbo-abdominal neuralgia* with three foci; the *inferior lumbar*, the *hypogastric*, and the *inguinal*.

15. The sympathetic pains which are propagated in the lower limb of the affected side may be divided into two groups: *an anterior or crural group, a posterior or sciatic group.*

16. In some cases the pain invades the *thoracic walls;* and is manifested there, sometimes in the form of vague aching, sometimes, and more frequently, at a fixed point from which it radiates along the course of the intercostal nerves.

17. *The symptomatic reflex visceralgic pains* of gonorrhœal orchi-epididymitis present three foci: *the superior or renal rachialgic focus*, the *deep hypogastric focus*, and the *epigastric focus.*

18. In the pathogeny of the reflex neuralgiæ symptomatic of orchi-epididymitis, the first part is taken by the *affection of the testicle*, the second by the *vaginitis*, and the third by the *inflammation of the cord.*

19. *Neuralgia of the testicle*, the *irritable testicle*, is in the majority of cases caused by an inflammatory affection localized in the testicular apparatus, which has become chronic, and has passed unperceived, but which may, at any given moment, be complicated by reflex neuralgia.

20. Inflammation of the testicle, or of its appendages, possesses in a remarkable degree the property of diminishing rapidly the quantity of red blood-corpuscles. The aptitude for patients to become anæmic under the influence of orchi-epididymitis varies according to age; it is the greater as the subject is less aged.

Art. 189.—*Recto-Vesical Lithotomy.*

By Louis Bauer, M.D.

(*St. Louis Medical and Surgical Journal*, No. 1, 1870; and *Edinburgh Medical Journal*, April.)

Dr. Louis Bauer reports the following interesting case at considerable length:—

Mr. T., æt. twenty-six, was found to have a stone in his bladder. In July, 1859, Dr. Bauer, assisted by Dr. Marion Sims and Dr. Thomas Emmet, performed the following operation:—

The rectum was kept open by Sims's larger speculum. The contours of the prostate gland were well exposed; and by the guide of the left index finger, I transfixed the recto-vesical septum immediately behind and at the middle of the base of that organ. This part of the operation was performed by a double-edged scalpel. The blade being about half an inch in width, the wound of necessity could not have been larger. The loss of blood was trifling, and no pain was experienced by the patient, who had not taken chloroform. In fact, he stated that the first intimation he had received of the progress of the operation had been from the finger in the bladder. The extraction of the calculus was effected by a common polypus forceps without impediment. The elasticity of the recto-vesical septum obviously exceeded the requirements of the case.

Dr. Sims acceded to my request in closing the wound with silver wire

sutures, and so effectually did he accomplish the task that not a drop of urine escaped during the entire after-treatment.

The operation occupied but a short time, and the patient suffered only from the fatiguing position. An elastic catheter was put in the bladder and opium given.

In the next six days his urine was drawn off by catheter. On the seventh he made it *per vias naturales*. On the eighth all the stitches were removed, and the wound was found to be quite healed; and next day he was able to drive twenty miles. The calculus when dried weighed 720 grains.

Dr. Bauer also reports the case of a calculus weighing 646 grains, which he removed from the bladder of a female by the vesico-vaginal operation with similar success.

Art. 190.—*Clinical Lecture on Hernia.*

By James Paget, F.R.S.

(*British Medical Journal*, Jan. 29.)

Mr. Paget chose the subject of hernia for his lecture, as he had lately had under care several cases which presented features of special interest.

The first case to which Mr. Paget referred was that of a woman who, at an advanced period of pregnancy, had become the subject of an acute strangulated inguinal hernia of large size. The gut rapidly became gangrenous, and was therefore not returned at the operation; and about fourteen days afterwards a piece of small intestine, eight inches long, came away by the wound. She began to pass fæcal matter *per rectum* about three weeks after the operation, and, at the present time (Jan.), very little fæcal material passes from the wound, showing that the continuity of the intestinal canal has been completely restored. She aborted soon after the operation. Mr. Paget considered that this case well illustrated the importance of disturbing the intestine as little as possible at the seat of constriction in cases where the strangulated portion is gangrenous; and gave as the rule for practice, that the constriction should be just sufficiently divided to enable the finger to pass into the intestinal canal above the seat of stricture, in both directions from an opening made in the strangulated portion, so as to make sure that fæces will pass freely from the wound.

Mr. Paget next made some remarks on the subject of congenital hernia and undescended testis in connexion with a case of this sort upon which he had lately operated. The patient, a young man, had never suffered from hernia before, and the rupture for which he was admitted came on suddenly after a strain; he was admitted four days after strangulation had set in, and two days after the bowels had ceased to act. The testicle on the ruptured side was very small and lay in the inguinal canal.

On the subject of the condition of undescended testes, Mr. Paget remarked that they are generally imperfect and sometimes very small. In speaking of the liability of these organs to be complicated with hernia, Mr. Paget said that this liability is *nil* when the testis is completely within the abdomen, but that if the organ be situated in any part of the inguinal canal, the patient lives in constant danger of hernia. Allusion

has been made to certain rare cases in which persons with undescended testes occasionally suffer from attacks of obstruction, the symptoms of which closely resemble those of strangulated hernia, but no hernia can be made out. Mr. Paget considers that, in such cases, a small portion of the gut does get strangulated for the time being, but that it is so small as to escape detection.

Particular attention was drawn to the possibility of confusing an inflamed retained testis with a strangulated hernia, and the necessity of always examining the scrotum in every case of hernia in a male was insisted on. Apart, however, from the absence of a testis from the scrotum, Mr. Paget considers that the character of the vomiting is a great help to diagnosis in these cases: in *hernia*, the vomiting is free, but there is comparatively little nausea, while the nausea in cases of *inflamed undescended testis* is constant, and the vomiting comparatively slight.

Mr. Paget drew attention to the important fact, that a congenital hernia, when of large size, passes through the aponeurosis of the external oblique, instead of passing downwards into the scrotum, as in ordinary cases, so that in operating for congenital hernia, the surgeon often comes to the hernial sac immediately beneath the superficial fascia.

Treatment of Reducible Hernia complicated with Undescended Testicle.—Mr. Paget advised that a truss should be worn for a number of years when the position of the testis will allow it—viz., when this organ is at, or immediately outside, the external ring; but that no truss should be worn when the testis lies at the internal ring, for it may descend lower; nor when it is situated midway between the external and internal rings, for then the pressure of a truss would be insupportable. Mr. Paget mentioned five years as the smallest period after the last descent of the hernia during which a truss should be worn; but alluded to cases in which a congenital hernia had reappeared after much longer intervals than the time specified, and thought it advisable that, if possible, the truss should be worn as a permanency.

Mr. Paget made a few remarks on the case of umbilical hernia in a boy on which he had operated. This patient has died since the operation, but no post-mortem examination has been allowed. He had suffered severely from rheumatic fever, and subsequently from ascites; and Mr. Paget remarked that some such history generally preceded the appearance of umbilical hernia in young persons, the hernia usually appearing after the relief of the ascites has left the abdominal walls weakened and lax; and in connexion with this subject, attention was called to a museum specimen (taken from the dissecting-room, and without history), in which four herniæ existed—two inguinal and two femoral—probably induced by some cause of distension acting at the points naturally weakest.

Art. 191.—*Large Femoral Hernia in a Male.**

By John M. Bryan, M.D., F.R.C.S. Eng., Northampton.

(*British Medical Journal*, December 18, 1869.)

The following case of femoral hernia having several points, perhaps somewhat uncommon, the author has thought the same might be of interest:—

"Mr. J. W., aged thirty-four, had had femoral hernia for about twelve or fourteen years. About that time since, I first saw him with it in a strangulated state. I succeeded in reducing by the taxis and ordinary means, it then being only about the size of a pigeon's or hen's egg. I fitted a truss, with full directions to him never to be without it. Since that time I had not examined nor attended him until the 31st July last, when I was suddenly fetched at 11 P.M., and found him with a tumour quite of the size of a man's fist, and strangulated. I tried the taxis for some time, and placed him on his back with the shoulders and knees elevated, and the thigh of the affected side flexed upon the abdomen, so that the crural arch should be rendered as free as possible from all tension. I used chloroform freely; but there being difficulty without an assistant, I sent for a medical friend in the town, one of our hospital surgeons. On his arrival we placed our patient thoroughly under chloroform for about two hours, with the tongue guarded and held out of the mouth by a spring-forceps. We placed him in a completely sloping position, with the head downwards on an inclined plane, and persisted in the taxis without avail. We then replaced him in bed with a bag of ice well applied over the part, gave him a strong opiate, also an injection of gruel, and left him at 3 A.M., apparently not much the worse for our manipulations. He had no sickness. At 10 A.M. we again saw him. The tumour was perhaps slightly relaxed from its previously tense state. The taxis was again used a little without avail. I then gave him a hypodermic injection of morphia, bandaged the swelling somewhat tightly with a flannel roller, and placed him on an inclined plane, with the heels much upwards and the head and shoulders downwards. At 4 P.M. we again saw him. The pulse was not much accelerated. He had no sickness. There was tenderness in the part, but he did not complain of much pain. The hernia was somewhat reduced in size; and we agreed if alteration had not taken place at our next visit, to operate. At 9 P.M. we again saw him. The symptoms were no worse; the tumour was somewhat shrunken, although still of immense size. We used a little manipulation without apparent effect, but I detected slight gurgling, giving me the idea that there was a little yielding. I asked the patient to try his own manner of manipulating (as he had frequently done so within the last few years, not having appeared to have worn a truss, so that the rupture had been down frequently), when the hernia vanished and passed up through the crural ring. The next day he was comfortable and had not much tenderness. I had a truss nicely fitted, and he got about in two days apparently

* Read before the South Midland Branch of the British Medical Association.

quite comfortable until the 16th August, when I was again sent for, the hernia having slipped down and again become strangulated. This, nearly of the same size as before, I managed with himself to reduce by manipulating with the taxis, although this time he had constant vomiting of coffee-coloured fluid, and had much more tenderness.

"The most peculiar feature in this case was, that the testicle on the side of the femoral hernia was protruded through the crural canal or ring into the groin; I passed it up, and found that it eventually came through the external inguinal ring into the scrotum. The patient told me that it had often been so since birth, sometimes in the scrotum and sometimes lost to feeling; and no doubt there was some congenital difference in his case. I perceived an incipient inguinal hernia on the other (the left) side, necessitating a double truss."

Art. 192.—*Strangulated Femoral Hernia in a Man—Operation after Fifty-six Hours—Recovery.*

Under the care of the late Mr. C. H. Moore, Surgeon to the Middlesex Hospital.

(*Medical Times and Gazette*, January 1.)

We are indebted to the Senior House-Surgeon of Middlesex Hospital, Mr. R. H. Lucas, for the notes of this case.

W. D., a healthy man, aged fifty, a coachman, was admitted into the male accident ward on the evening of Nov. 23, 1869, with symptoms of strangulated hernia. He stated that for ten months past he had been ruptured, a swelling appearing in the left groin at frequent intervals; but as he had always been able to reduce it himself he had never worn a truss. Two days before admission, however, the bowel coming down with some slight exertion, patient found himself unable to reduce it. In the course of the day the swelling began to increase, and nausea and vomiting set in. There was no action of the bowels, and considerable pain and tenderness about the abdomen made him seek surgical aid. Taxis, with and without chloroform, failing, he was sent to the Hospital fifty-six hours after the first symptom of strangulation.

On admission, the man looked very worn and suffering, complaining of pain and tenderness across the abdomen, and also in the hernial tumour. This was larger than a hen's egg, situated just upon Poupart's ligament on the left side, feeling firm and rather doughy, with no impulse nor fluctuation. The tongue was thickly coated, and the man complained of thirst, and frequently retched.

Mr. Moore was at once sent for, and he operated without delay. When the sac was opened a couple of ounces of dark blood-stained serum gushed out, and a large quantity of omentum was found concealing a small knuckle of intestine, tightly nipped. Gimbernat's ligament —the seat of constriction—was divided, and the bowel, which did not seem to have suffered materially, returned; and then, a tight ligature being applied about the omentum, the greater part of this was cut away, the wound closed, and covered with carbolic oil under a pad and bandage.

Patient passed a fair night, but next morning was found lying with knees drawn up complaining of abdominal tenderness, especially in left iliac region. No more vomiting, but tongue furred, and bowels not yet opened. Ordered milk diet, linseed poultices to abdomen, and a pill of pulv. opii gr. j, with hydrarg. chlor. gr. ij, to be taken every sixth hour.

Nov. 25.—The abdominal tenderness was much diminished, but there was considerable swelling and redness about the wound. The sutures were removed, and a poultice applied. The lips of the wound had nearly united.

Nov. 26.—The swelling persisting, the wound was slightly opened up, and some confined bloody serum released. There was as yet no action of the bowels, and the tongue remained thickly furred. Tinct. opii to be applied under the poultice, and pil. calomel. c. opio to be taken twice a day. Diet restricted to milk Oj, and strong beef-tea Oij.

During the next week the patient was free from any sign of general peritonitis, but a constant discharge of offensive pus from the deep parts of the wound showed that suppuration of the sac was going on. The ligature put about the omentum came away on the sixth day, the pus assuming a healthier appearance shortly afterwards, and since then progress towards recovery has been uninterrupted.

The bowels remained quite torpid until Dec. 6 (13th day), when they were cleared out by a simple enema, the motions of good colour and consistence. On the same day Mr. Moore made a counter opening on the outer side of the swelling, which afterwards discharged healthy pus from both apertures. When we saw the patient on Dec. 8, he seemed nearly well, save for the slight suppuration which continued at the seat of operation.

Art. 193.—*Case of Sloughing Hernia.**

By Patrick Heron Watson, M.D., F.R.S., F.R.C.S., Lecturer on Surgery, Surgeon to the Royal Infirmary and Chalmers Hospital.

(*Edinburgh Medical Journal*, March.)

The features of chief interest in this case are :—

1. The period which elapsed between the descent of the rupture and the occurrence of symptoms of strangulation, amounting to four days.
2. The subsidence of these symptoms after lasting for a few hours.
3. The development of symptoms of suppuration within the sac four days after the symptoms of strangulation had subsided.
4. The sloughing of the peritoneal coat of the bowel without the involvement of the muscular or mucous coats.
5. The escape of the patient from the establishment of a regular fæcal fistula.

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* Abstract of a Paper read before the Edinburgh Medico-Chirurgical Society, February 2.

6. The long period which elapsed before the bowels acted spontaneously.

7. The spontaneous recedence of the knuckle of intestine within the abdominal cavity during the process of healing.

The following practical deductions appear worthy of enumeration:—

1. Not to regard the use of the taxis in incarcerated hernial protrusion as devoid of risk, or preferable to operation.

2. Not to delay operative interference when local inflammatory symptoms continue and extend.

3. Not to regard the whole thickness of a knuckle of intestine as in a sloughing condition because the serous coat is so, and lies bathed in a fetid abscess.

4. To prefer simple division of the stricture, where extensive firm adhesions exist, to breaking up the adhesions, and returning the bowel.

5. To abstain from all measures calculated to obtain evacuation of the bowels when a doubtful condition of the intestine is disclosed at the operation; to nourish the patient upon the food least likely to afford in digestion an abundant residuum; and to employ opiates, so as to keep all uneasy symptoms in abeyance.

Art. 194.—*Statistics of Hernia from an Etiological Point of View.*

By Dr. A. Wernher.

(*Langenbeck's Archiv*, Band ii. Heft 3, 1869; *Gazette Hebdomadaire*, No. 9, 1870.)

Statistical researches considerable in number and formed from much material have been made on hernia; and, to name but the most important works, Knox, Cloquet, Nivet, Marshall, and especially Malgaigne and Kingdon, have collected a number of notes which have apparently established most of the etiological conditions. There are, however, notable differences in the results obtained in one quarter and in the other, and Dr. Wernher has imposed upon himself the task of seeking the truth in the revision and comparison of the documents accumulated in various countries.

In dealing with the question of the relative frequency of the different forms of hernia, the author has utilized the statistics of the London Truss Society. Out of 3085 herniæ, 700, that is to say, nearly one-fourth occurred before the age of ten years; and in the female the number of inguinal herniæ was one-tenth that in the male, and, contrary to the opinion of Malgaigne, that in advanced life the number of inguinal herniæ became almost equal at the epoch of old age, the author finds that the difference remains about the same, or is even somewhat greater in old age than in youth. The frequency of crural to inguinal herniæ is as 1 to 9. With females between the ages of thirty and forty years the number of crural is double that of inguinal herniæ, but during the years of advanced life inguinal becomes almost as frequent as crural herniæ, but not more frequent, as was declared by Malgaigne.

Dr. Wernher compares Malgaigne's recruiting statistics with the results obtained from the tables of recruits in Belgium, Saxony, Hesse, and Wurtemburg, and also the French recruiting tables of 1865.

Whilst Malgaigne concluded that there was on an average one case of hernia for every thirty-two persons above twenty years of age, Dr. Wernher gives a much greater proportion. Thus in France (1865) there was 1 individual with hernia to every 17 or 18 of conscripts; in Belgium the proportion was 1 to 19 or 20; in Hesse and Saxony, 1 to 17; in Wurtemburg, 1 to 11.

With regard to the relative frequency of the side of the body affected, the statistics of the London Truss Society give precise information. In the male it varies according to age; thus, up to one year of age there are more than twice as many herniæ on the right side; from one to five years the proportion is much greater, 3·7 on the right to 1 on the left. But this very great frequency on the right side diminishes with age, the slightest extent of difference existing at the epoch when the male is most active, that is to say, from twenty-five to forty-five years of age.

ART. 195.—*Double Scrotal Tumour on Left Side, formed by Hydrocele of the Tunica Vaginalis, and Hydrocele of the Cord: Clinical Remarks.*

Under the care of Sir W. FERGUSSON, at King's College Hospital.

(*The Lancet*, January 15.)

In some clinical remarks upon the following case, Sir W. Fergusson drew attention to the different methods pursued in examining a case of doubtful swelling of the scrotum, and stated his reasons for concluding that the second swelling was a hydrocele of the cord. He then compared the two fluids, pointing out that that from the second tumour was milky in appearance, whilst that from the larger tumour, which was first tapped, was transparent, and of a pale-yellow colour. On microscopical examination, spermatozoa were seen in the milky fluid from the hydrocele of the cord, which also, on the addition of nitric acid, deposited a smaller quantity of albumen than the yellow fluid from the tunica vaginalis.

Mr. H. Royes Bell has kindly supplied us with this record:—

George B——, aged fifty-four, a stable-man, was admitted, having applied for surgical relief under the supposition that he was suffering from a large rupture on the left side of the scrotum. On examination, the following morbid phenomena were observed. On the left side of the scrotum was a large swelling, which gave no impulse on coughing; it did not disappear, or even diminish in size, on pressure, and was free from pain. There was indistinct fluctuation. The testicle could be felt at the middle and back part of the swelling. Light was transmitted on illumination with a candle. This swelling had made its appearance about two years before, and had gradually increased to its present size. The patient attributed it to a strain caused through lifting a heavy sack.

Sir Wm. Fergusson tapped the tumour, and drew off a large quantity of clear yellow fluid. The scrotal swelling, however, did not disappear entirely, and there then seemed to be another hydrocele, which was evidently connected with the cord, as it occupied the upper part of the scrotum. A trocar was then thrust into this tumour, and some milky fluid drawn off. The hydrocele that was first tapped was then injected with diluted tincture of iodine.

Art. 196.—*Case of Inguino-Crural Rupture.*

By C. Holthouse, F.R.C.S.

(*Medical Times and Gazette*, April 30.)

At a meeting of the Clinical Society, held Feb. 8, Mr. Holthouse related a case of Inguino-crural Rupture, a name he proposed to apply to that variety of inguinal hernia in which the protrusion, after emerging from the external abdominal ring, turned outwards into the groin instead of descending into the scrotum, thus resembling in form and position a femoral hernia. Mr. Holthouse believed it to be nearly always a congenital affection, and associated in the male with an imperfect descent of the testis and an undeveloped scrotum on the side of the protrusion; whereas the determining cause in the female was an abnormal separation of the columns of the external ring. He then referred to examples of this rupture which had been recorded by Lawrence and Birkett, on the authority of Monro, Scarpa, and Fano, as well as to two of more recent date, by Dr. Humphry, of Cambridge, and Mr. Paget. Mr. Holthouse had met with two such—one in the male, and the other in the female: details of the former of which he related to the Society. The tumour, which had become suddenly larger and painful under a violent muscular effort, disappeared within twenty-four hours, under the influence of rest, opium, and the application of ice to the tumour, leaving behind nothing but the testis, which occupied a large adventitious pouch (the vaginal sac) between the skin and aponeurosis of the external oblique muscle.

Art. 197.—*Lymphatic Varices of the Penis and Scrotum following Contusion.*

By M. Trélat.

(*Gazette Hebdomadaire*, No. 51, 1869.)

The following case was brought under the notice of the Imperial Society of Surgery of France:—

"The patient was a man twenty-six years of age, who was admitted on October 4 into the Hôpital de la Pitié. Four days previously he had been pushed against the corner of a table. This caused contusion of the penis at its base and its upper part on the right side. There was much swelling of the organ during the night. On the patient's admission the penis was enlarged and œdematous, and the glans completely

hidden. There was no urethral discharge. The œdema was hard and red. There was very little pain on pressure except at the seat of the blow, which presented a tumefaction projecting beyond the rest of the organ. The œdema soon extended to the scrotum. On the next day a rosy semi-transparent elevation was observed on the dorsum of the penis; on pricking this with a pin there was a flow of a slightly yellowish fluid. An histological examination demonstrated that this fluid was lymph. At the time of the commencement of these symptoms there was some amount of balanitis resulting from the contact of the œdematous mucous membranes.

"After the patient had remained in the hospital for a short time, the scrotum became red and was covered by papulæ, also containing lymph. These appearances were limited exactly to the penis and the anterior part of the scrotum. The treatment in starch baths, and in manual compression exercised by the patient. The œdema then diminished, the elevations disappeared, and the patient was discharged as convalescent on October 26."

Art. 198.—*On Gangrene of the Penis.*

By M. Demarquay.

(*Archives Générales de Médecine*, Mai.)

M. Demarquay thinks it remarkable that gangrene of the penis has not hitherto been the object of any special work, since this morbid affection is far from being rare at the present day, and was mentioned by several old authors, including Hippocrates.

Frequency of the Affection.—M. Demarquay has collected from periodicals twenty-five cases; he believes that this form of gangrene is a frequent complication of various lesions of the penis.

Seat.—Varies very much. Sometimes, and most frequently, the prepuce alone is attacked. The skin of the penis may be entirely affected as far as the root of the organ. Astruc gave as points of selection the cutaneous, dependent, and lax parts of the penis, such as the prepuce; "whence," states this authority, "the gangrene spreads in a short time to the skin of the whole organ, and also to the corpora cavernosa."

The disorganization may next attack the skin of the neighbouring regions, and extend as far as the groins and the umbilicus; the glans penis, the urethra, the corpus cavernosum, may sphacelate either partially or wholly, but this is very rare.

Varieties.—All forms of gangrene have been observed in the penis. Dry gangrene is more rare than the moist form. Complete and general disorganization of the penile organ has been observed in some rare instances.

Causes.—Gangrene of the penis is rarely the expression of a purely general condition. The causes are more local than general, although the latter exist. These predisposing causes are age and constitution.

(*a*) *Age.*—Gangrene is almost as frequent in the infant and in the old man as in the adolescent or the adult. With infants it is especially in cases of epidermic exanthemata that this complication is observed; with the old man, on the other hand, it is nearly always due to some local cause.

(*b*) *Constitution.*—Lax, lymphatic constitutions seem to present a special disposition to penile gangrene. In other cases, on the other hand, the gangrene attacks individuals with a robust and sanguine constitution.

The determining causes are *fevers* and *poisoning*.

Fevers.—Cases have been recorded of the affection occurring with small-pox, typhoid fever, scarlatina, erysipelas.

Poisoning.—Gangrene of the penis has been made out after glanders. Finally the ergot of rye may sometimes determine the affection.

The *local* causes play an active part in the production of the morbid phenomenon.

Phymosis may indirectly produce gangrene of the penis by causing the retention and accumulation under the prepuce of an irritating discharge from balanitis or a chancre. Removal of an elongated prepuce when it is inflamed from this cause, will sometimes be followed by penile gangrene.

Paraphymosis is also a serious condition for the production of gangrene of the penis.

The traumatic causes of gangrene of the penis are numerous. These may be divided into causes which act from without inwards, such as the compression exercised upon the penis by a ring or ligature, and causes which act from within outwards, as a calculus arrested in the urethra or some foreign body introduced into the canal. Finally, we have wounds of the penis; of these there are two kinds, those which are spontaneous, as a chancre or some other form of ulceration, which has taken on phagedænic action, and those caused by the knife and by crushing and contused wounds.

Of all the causes just enumerated there is not one which can by itself produce gangrene of the penis. Inflammation is the necessary corollary of each, for gangrene cannot be produced without the development to a certain degree of this condition. Inflammation alone may sometimes constitute the initial phenomenon and the termination of gangrene.

The inflammatory causes of gangrene of the penis are simple balano-posthitis, phlebitis of the dorsal vein, and penitis. This latter cause frequently implicates typhoid fever, and results in entire loss of the organ; it also follows giving way of the urethra, either from distension of the canal behind a tight stricture or from a false passage made in catheterism.

"Finally," states M. Demarquay, "are to be mentioned as likely to facilitate the development of penile gangrene, the presence of an epispadias or rather of a hypospadias. It is not a rare occurrence to find patients who are affected with faults of conformation of this kind, either congenital or acquired, who are compelled to use a catheter and may thus determine erosion or even laceration of the urethra, and consequently facilitate the penetration of urine into the cellular tissue of the penis. Hence it becomes urgent to remedy these conditions if one would be anxious to avoid the sight of a rapid course of the phenomena of mortification. These anatomical conditions do not contribute otherwise than indirectly to the production of gangrene of the penis."

Symptoms.—"During the period of invasion the skin gradually swells and becomes slightly œdematous; the tint of the integument becomes

dull, the sensibility diminishes, and the temperature is lowered. There is no pain. At a later period phlyctenulæ form, these vary much in number and size, and are more or less distended by a yellowish or reddish serosity. The gangrene then makes rapid progress; the insensibility of the skin increases, the temperature still falls, the tint of the skin darkens, and gangrene is actually established. The sphacelous mass is black and soft or hard, according to circumstances. It presents at its periphery an excavated sinuous and reddish line of demarcation, which is generally well marked on the tenth day. At the time that these local symptoms follow their evolution, general phenomena are manifested with an intensity variable and in proportion to the gravity and extent of the gangrene. Fever is set up, the tongue becomes dry and furred, the pulse rapid, small and impressible. The respiration is accelerated, sometimes much disturbed. It is not rare to observe œdema of the lower extremities, diarrhœa, insomnia, delirium, and even coma. Death may finally terminate the painful train of symptoms."

Gangrene of the penis may be complicated by orchitis, hæmorrhage after the detachment of sloughs, urinary infiltration, and purulent infection.

Uncomplicated gangrene of the penis has generally a short duration. Its usual evolution lasts only for a few days, but in some instances it may be prolonged over several weeks or even months.

Prognosis.—The prognosis of gangrene of the penis depends upon the greater or less extent of the lesion and upon the depth to which it has attacked the tissues. The loss of the prepuce only has no other importance than that of diminished sensibility of the glans. When the gangrene has involved one of the corpora cavernosa, a loss of substance is produced which is replaced by cicatricial tissue. The genital functions are then seriously modified, and often to such an extent that the patient falls into a state of profound discontent, and sometimes into a state of marasmus ending speedily in death.

Treatment.—M. Demarquay lays down three chief indications in the treatment of penile gangrene: to endeavour to prevent gangrene when it is imminent; to arrest its progress at the commencement; to extirpate it radically after it has been confirmed.

The first indicated may be fulfilled in favourable cases by making scarifications more or less deep into the swollen and œdematous tissues, in order to assist the circulation both of the blood and lymph. In cases where the gangrene has already made some progress, M. Demarquay recommends the actual cautery as a means of bringing about a transformation of the gangrenous ulcer into a normal and simple wound.

M. Demarquay does not speak very favourably of amputation of the penis in cases of gangrene. The proceeding he holds cannot be required except where the gangrene is due to some constitutional or debilitating cause; and he asks whether in instances of this kind one can justly say that the gangrene will be arrested after the ablation of the mortified part. The same cause that has presided over the sphacelus of the first portion may continue to act and lead the surgeon to perform another painful and useless operation. M. Demarquay thinks it right to apply the principle of never performing amputation of the penis beyond the sphacelated portion. On the other hand, he observes, amputate in

cases where the organ has been rendered useless by extensive destruction and subsequent loss of elasticity from cicatrization.

Art. 199.—*Immediate Treatment of Contusion of the Perineum with Laceration of the Urethra.*

By Stephen Rogers, M.D.

(*New York Medical Journal*, January.)

Dr. Stephen Rogers, in some able remarks on a case of laceration of the urethra from contusion of the perineum, deprecates prolonged attempts at catheterism in recent cases of such injuries. A catheter or sound should be cautiously introduced, if possible, into the bladder. We are then to wait for the earliest signs of urinary extravasation, when a free incision is to be made in the perineum and into the urethra on a staff or catheter. If, after this, urine do not flow freely from the wound, owing either to paralysis of the bladder or to obstruction in the urethra behind the laceration, the author advocates an extension of the incision backwards into an uninjured part of the canal, and catheterism by this opening, in preference to attempts at passing the instrument from the meatus. This procedure is preferred to tapping by the rectum or above the pubes, as being milder, more direct, and especially as favouring the restoration of continuity to the ruptured urethra; it being well known that such restoration of continuity and removal of constriction are much more likely to occur when the lacerated passage is kept at rest and free from irritation by urine, than when the stream of urine attempts to pass by the natural but lacerated passage, and thereby keeps up irritation. The author deprecates the practice of retaining a catheter in the bladder, as liable to cause urethral inflammation, and retard the healing of the wound.

Art. 200.—*On some of the Functional Derangements of the Male Genital Organs.*

By W. F. Teevan, B.A., F.R.C.S.

(*The Lancet*, April 23.)

At a meeting of the Harveian Society, held March 3rd, Mr. W. F. Teevan read a paper on *Some of the Functional Derangements of the Male Genital Organs.* 1. *Abnormal erections in children* might occur at the earliest age, and were caused by some local irritation, as very acid urine, gravel, calculus, worms, prolapse of rectum, or cutaneous eruptions. Children who were forced to lie much on their backs, as in hip-joint disease, suffered from erections through the pressure of the urine on the most sensitive part of the bladder. A tight foreskin was a fertile cause of evil, and ought to be removed. 2. *Too frequent nocturnal emissions in young men* often caused much alarm; but the mental anxiety, rather than the seminal loss, was the cause of the depression. Drachm doses of the tincture of sesquichloride of iron would entirely

check these emissions. 3. *Nocturnal emissions in married men* were of common occurrence, and arose from debility and irritation, the results of marital excesses. Local applications of mild solutions of the nitrate of silver would be necessary to effect a cure. 4. *Seminal discharges during defecation* took place in most men at some period of their lives, or some prostatic fluid only might be pressed out. When, through indigestion, the semen became attenuated, or there was constipation, the powerful contractions of the levator ani would press out some fluid. Laxatives, &c., would cure these cases. 5. *Diurnal emissions* were of serious import, and might be occasioned through the slightest mental or physical excitement. Suppositories of camphor, belladonna, and opium were of great use, but a solution of the nitrate of silver would have to be applied to the veru montanum. 6. *True lethargy of the sexual organs* was sometimes observed in powerful young men who had led continent lives, and generally manifested itself as loss of sexual desire. Phosphorus, ergot of rye, cantharides, and strychnia were indicated in these cases.

Art. 201.—*Acute Orchitis treated by Puncture.*

Under the care of Mr. Nunn, of the Middlesex Hospital.

(*The Lancet*, January 29.)

The treatment of common gonorrhœal orchitis by puncturing the testis is advocated by Mr. Henry Smith, of King's College Hospital. That pursued by Mr. Nunn at the Middlesex Hospital consists simply in the application of the cold douche to the testis at frequent intervals, whilst the patient lies in a hot bath. A case occurred lately which determined Mr. Nunn to make use of Mr. Smith's method, and we report it as it illustrates the advantage of the timely relief of tension in inflamed structures. Possibly Mr. Smith's operation should be classed with iridectomy in acute glaucoma, an operation essentially for the relief of tension,—the fibrous sclerotic of the eye, and the tunica albuginea testis having at least a family likeness.

"John B——, aged nineteen, was admitted into the Middlesex Hospital on November 13th, 1869, with suppuration of the left testicle. The abscess or abscesses had burst, and apertures existed in the scrotum, yielding pus. Six weeks previously he had found a gonorrhœal discharge from the urethra, and within one week acute orchitis had supervened, which ended in suppuration, which was described as his state on admission.

"At first poultices, as the most soothing application, to the inflamed scrotum, and subsequently a mercurial ointment, with the internal administration of nitric acid and decoction of cinchona, constituted the treatment, having the effect of the patient's being able to be discharged, apparently convalescent, on the 30th—that is, after a stay of seventeen days in Hospital.

"On the 3rd of December, however, three days after leaving the Hospital, the patient was readmitted, with acute inflammation of the opposite (right) testicle. The intensity of the inflammatory action was

considerably greater, and more limited to the testis itself, than in ordinary orchitis. The pain was very severe. One-third of a grain of morphia three times a day in a pill, and mercury with camphor ointment to the scrotum, was continued until the 7th, when the testicle was ordered to be punctured at three points. The immediate result of this treatment was subsidence of pain, and resolution of the inflammation, no repetition of the punctures being needed. Tonics and wine were given from the 4th till the 28th, when the patient was discharged convalescent.

"Suppuration of the testicle unconnected with either syphilitic or tubercular deposit is an uncommon result of inflammation of the organ. But it is a momentous question whether the spoiling of its special function does not more often follow prolonged inflammation than the affection is accredited with. Making allowance for the share of the general enlargement due to the distension of the tunica vaginalis by serum, the thickening of the epididymis and the cellular and other investments of the testicle, including the scrotum, there must be a balance of engorgement belonging to the body of the testicle which, if allowed to remain, cannot but imperil its secreting properties. Whatever be the plan of treatment which promises *safely* to shorten the period of tension demands attentive consideration."

Art. 202.—*On Subcutaneous Injection of Bubo.*

By Dr. Wertheim.

(*Wien. Med. Wochenschrift;* and *Medico-Chirurgical Review.*)

Dr. Wertheim, attached to the syphilitic and skin department of the Rudolf Hospital, Vienna, states that he has given up all attempts at dispersing buboes by causing their absorption, and now treats them by a very simple and efficacious procedure, subcutaneous injection. A solution of various substances, as morphia, camphor, sulphate of copper, &c., may be used as circumstances require, that of muriate of morphia (gr. iv. ad aquæ ʒij) being that which is usually preferable. The ripe abscess is punctured by means of a thick needle, or the tube of a strong Pravaz syringe, and after most of the pus has been gently pressed out, the injection of eight or ten drops of the solution is practised, the patient being taught himself to empty every three hours the fluid that may have collected. The injection is at first repeated daily, and afterward at longer intervals. Although not essential, it is better for the patient to keep in bed. The advantages of the method are, that the pain in the abscess almost immediately ceases, and the other inflammatory symptoms steadily diminish; the thickened pus is gradually transformed into a thinner and thinner exudation, gradually decreasing in quantity, so that in three or four weeks it ceases entirely, and no cicatrix remains. The secretion of pus is confined to the spot, and the surrounding induration gradually diminishes.

Art. 203.—*On the Treatment of Orchitis by Incision.*

(*The Lancet*, February 9.)

The last number of the *Archives Générales de Médecine* contains an interesting paper, by M. Salleron, *On the Mode of Treating Orchitis by Incision.* We are well aware that this practice is adopted by several surgeons in England, with, as they believe, justifying success; and it has been sanctioned in France by the high authority of Vidal, who, in the fifth volume of his *Pathologie Externe*, states he has operated on no less than 400 patients without ever having observed any ill effects, whilst the sufferings of the patient have usually been alleviated in the course of an hour, the ease obtained being followed by refreshing sleep. M. Salleron states truly that, notwithstanding this flourishing account, the operation is but rarely undertaken in France, and, when adopted, it is principally in those cases where other means have failed, and where it is consequently most dangerous. He gives the details of two cases in which he ventured on its trial. The first was in a soldier in whom orchitis had supervened on a slight contusion of the right testicle, occurring whilst there was still a little blennorrhœa after a clap. Leeches, warm baths, poultices, and ointments composed of belladonna and mercury, failed to produce any relief to the violent pain. Incision was resorted to. A few drops of serum escaped after the withdrawal of the narrow-bladed bistoury, and temporary amelioration of the symptoms followed; but within a few hours a hernia of a reddish-grey colour protruded through the wound of the tunica albuginea, which continued to increase for ten days till the whole of the contents of the testicle had become evacuated, leaving only a shell, formed by the tunica albuginea, of the size of a nut. The course of the second case was almost identical with the foregoing. These cases appear to us to be very instructive. It might indeed be argued that, when the inflammation proves so violent, the functions of the organ would be seriously impaired on its subsidence; but we think most men would prefer to retain the organ of its normal dimensions, taking the chance of its resuming its natural powers, to running the risk of having it reduced to the size of a nut, with complete evacuation of its contents, for the sake of a temporary relief from pain. It is to be observed, however, that various cases are on record of injury to the testicles by clean cuts, where the tunica albuginea has been divided to a considerable extent, and where no evil consequences have followed. In these cases the organs have of course previously been perfectly healthy. Velpeau in particular gives the details of one in which a man in a duel received a sword thrust that laid open the scrotum, and divided the tunica albuginea to the extent of nearly a quarter of an inch, permitting the seminiferous tubules to be distinctly visible, but which had no tendency to protrude: here complete recovery followed. The same observer remarks that hernia of the testis rarely if ever occurs after punctured wounds, such as are sometimes made by inexperienced, or even occasionally by experienced, hands in tapping for hydrocele. M. Salleron remarks, and we are disposed to agree with him, that in the acute orchitis accompanying blennorrhagia the inflam-

mation is by no means restricted to the epididymis, but, on the contrary, affects the whole organ. In the more chronic form, on the other hand, there can be little question that the body of the testis itself remains altogether unaffected; whilst such cases are usually accompanied by a considerable amount of effusion into the tunica vaginalis. The moral of these cases seems therefore to be, as M. Salleron puts it, that in blennorrhagic orchitis of the parenchymatous form incision of the tunica albuginea is useless when the attack is slight, and dangerous when severe.

Art. 204.—*Analysis of* 184 *Cases of Stone in the Bladder of the Adult treated by Lithotrity.**

By Sir Henry Thompson, F.R.C.S., Surgeon-Extraordinary to H.M. the King of the Belgians, Surgeon and Professor of Clinical Surgery to the University College Hospital.

(*The Lancet*, June 4.)

The author presented a series of 184 consecutive cases of lithotrity in the adult, operated upon within a recent period; all treated by the same method and with the same instruments. He furnished all the most important details relating to each case, and presented the stone itself in almost every instance, preserved for inspection. His object was to make an impartial estimate of the crushing operation, to ascertain its real value, and its place amongst surgical operations. Although this had never yet been fully done, he regarded Sir B. Brodie's last communication to the Medical and Chirurgical Society as perhaps the most trustworthy and valuable record, so far as it goes, which exists on the subject. In order to accomplish this object, he had made carefully written records of every case; and he cited the following circumstances as necessary to be taken into consideration: that the 184 cases had been treated by a uniform method, within a comparatively brief period of time; that all were adults, and embraced much variety of constitution; that all the important facts relative to each were noted in a history of each one, which was attached to the paper as an appendix; and that a large proportion of the calculi were of considerable size. And the author believed he was correct in saying that so complete an opportunity for studying the results of lithotrity had not been offered hitherto, since, as far as he was aware, the data necessary for the formation of a judgment had not been presented to the profession, either in this country or elsewhere.

The results of the operation were discussed under the following heads:—1st. The rate per cent. of recovery after the operation, and the cause of death when it occurred. 2nd. The general condition of the patient after the operation. 3rd. The frequency of recurrence of stone after lithotrity.

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* Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, held May 10th.

The chief facts relative to the 184 cases were as follows. They were consecutive in point of time, no case being omitted; that all were adults, and mostly of advanced age; that they included many individuals of very feeble health and constitution; that they were chiefly British, although several were from other nations. The mean age of the 184 cases was no less than sixty-one years. The youngest was twenty-two years old. Only three were below thirty years. The oldest was eighty-four years. There were forty-six cases of seventy years and upward. With very few exceptions, all stones of an ounce and upward were reserved for lithotomy. All obviously below that were crushed. Not one case was refused operation, not one was left unfinished, and in no instance was an operation of lithotrity completed by lithotomy. The recoveries, reckoning every kind of casualty following the operation, were 93 per cent.; but omitting five cases of death, not by any means due to it, the mortality amounted to only 4 per cent. A second operation for recurrence of the stone was performed for 13 of the 184 cases; 122 were uric acid and the urates; 16 were mixed; 40 were phosphatic; 4 oxalate of lime; 1 cystic oxide; and 1 pure phosphate of lime.

The important logical conclusion to be derived from the mass of facts considered was that lithotrity is an eminently successful operation. For a certain number of cases, its success may be regarded as a certainty—absolutely without fear of any contingency, except such as attends the minor operations of surgery,—for example, the opening of a small abscess, or the passing of a catheter. For the author stated that he had never lost a patient in the whole course of his experience after crushing a stone which was no larger than a small nut; and this he considered was a size at which, with few exceptions, every stone ought to be discovered. But this very fact led the author to remark that the success of lithotrity cannot therefore be considered apart from a knowledge of the extent, in regard of the magnitude of the stone and the constitution of the patient, to which the capabilities of the operation have been pushed. When it is employed for stones as large as a date or a small chestnut—and it is impossible to deny the excellent chance of success which this method offers to the subjects of such stones—a certain, but still only small, proportion of deaths must be expected. And the rate of mortality will correspond with augmentation in the size of the stone, and with the amount of existing disease and age on the part of the patient. Given a small stone in a fairly healthy person, and success is certain; the possibility of contingency in such a case depending only on the presence of those remote and excessively rare conditions which will make for an individual here and there the mere passing of a catheter a cause of death.

The rule observed had been, for the most part, to apply lithotrity to all calculi obviously less than an ounce in weight, easily discovered by sounding, and to operate on all larger ones by lithotomy.

Art. 205.—*Preventive Treatment of Syphilis.*

By Professor Thiry.

(*Presse Belge*, April 24; and *Medical Times and Gazette*, May 21.)

At a clinical lecture delivered by Professor Thiry, of Brussels, he warned his pupils against resorting to precipitate treatment of venereal sores under the idea of preventing syphilis. Until the chancre becomes indurated it is not, in fact, syphilitic at all, and so far from being benefited by mercury, it not unfrequently becomes phagedænic. The mercury is not indicated until induration appears. Then it acts as a curative, not a preventive, agent. The treatment of the chancre itself prior to this, whatever its form, extent, seat, or duration, should be local yet energetic; and the bringing this chancre into a state of simple ulcer is the best guarantee we can offer against constitutional syphilis. When, however, in spite of such local treatment, specific induration does appear, syphilis is unmistakeably present, and we must interfere for the prevention of further contamination of the system. Now mercury must be at once and vigorously employed, and we are then often able to cut short the disease at its very commencement; and the mercury promptly used has to be continued for a much less time than when delayed. The disappearance of the specific induration is also at this early period the criterion of the efficacy of the cure.

Art. 206.—*Extraction of a Catheter by the Umbilicus.*

By M. Foltz.

(*Medical Times and Gazette*, January 8.)

M. Foltz recently read at the Lyons Medical Society a very interesting case that had been under his own and M. Petrequin's care. A woman, the mother of several children, applied to him, stating that, six days before, when between six and eight weeks advanced in pregnancy, abortion had been effected by means of a female catheter. In passing in the instrument, however, it escaped from the hand, and could not be recovered, nor could it be found amidst the discharges which ensued on the operation. Careful exploration with the finger, the speculum, and Simpson's instrument, carried in every direction within the cavity of the uterus, failed to discover any metallic object. Examinations of the bladder and rectum were attended by the same result; and, as there was neither fever nor pain present, expectation was advised, it being also suspected that the instrument might have passed out without the patient's knowledge.

It was not until four months later that she again presented herself, still having all the appearance of health, but complaining of a tumour at the umbilicus. This did not project much, but it was hard and rounded, and reducible on the slightest pressure, to reappear immediately—just as a commencing umbilical hernia. M. Foltz, however, felt certain that it was produced by the extremity of the catheter; and, in fact, by passing a finger of the one hand into the cervix uteri and placing the other hand over the umbilicus, the body could be moved to

and fro pretty much within the axis of the upper aperture of the pelvis. M. Petrequin, now consulted, advised the immediate extraction of the foreign body, although thus far it had given rise to no unpleasant symptoms. Its great mobility, the impossibility of determining the precise seat of its lower extremity, and the fact of its entire disappearance during horizontal decubitus, rendered this no easy matter. The total disappearance of the object, as if by enchantment, when the woman lay down, was indeed very remarkable, and after she had stood up it required that she should walk and fatigue herself for at least an hour before the umbilical tumour reappeared and the diagnosis could be pronounced as certain. During the treatment preparatory for its removal, on several occasions its presence could not be determined. As a preliminary step the uterine cavity was sufficiently dilated by the introduction of compressed sponge twice daily during a week. But in spite of such dilatation, the lower end of the catheter could not be felt, nor the exact portion of the organ in which it was located determined, the upper end retaining its mobility so as only to be vaguely felt. A renewed dilatation for six days longer was effected, when it had to be suspended for eight days in consequence of the menses appearing. When these had ceased it was renewed for another three days, and it was then ascertained that the lower end of the catheter was lodged in front of the anterior wall of the uterus, or rather in the utero-vesical partition. Between the uterus and bladder, on a level with the superior orifice of the cervix, the anterior lip of which was notably thickened, the index finger, introduced into the cervical cavity, or merely placed at the bottom of the anterior *cul-de-sac* of the vagina, was able to feel through a considerable thickness of tissue, but still plainly enough, the end of the catheter. In order to remove the instrument, the woman was placed standing against an article of furniture, and, while M. Foltz fixed between two fingers the end that projected at the umbilicus, M. Petrequin incised the whole of the anterior lip of the cervix, sometimes employing long straight scissors, and sometimes a narrow long bistoury with a rounded end, and having its blade guarded with diachylon. To the surprise of both, the incision did not allow of the extremity being reached, although it extended through the whole lower lip and higher up than the cervix. Endeavours were in vain made during two hours to reach it, its mobility and the depth of its situation rendering wounding of the bladder a possibility. Next day, after an ineffective renewal of the attempt, the removal of the body by the genitals was given up, and an incision, comprising the skin and aponeurosis, was made over the upper projecting end at the right of the umbilical ring. At the same time, the instrument was thrust from below upwards, so as to project through this incision. A thread was passed through its eyes in order to retain it, and a renewed attempt was made to remove it through the genital organs by pushing it towards the uterus. This, however, could not be accomplished, and it became evident that the entire instrument had passed through the uterine wall, which had closed and cicatrized over it. It was then resolved to remove it by drawing it upwards with a torsion movement, in order to disengage it, but on raising it up the womb and bladder were dragged with it, and such severe pain and nausea caused as almost to produce syncope. The greatest precaution was therefore required in

order to gradually break up the adhesions. The instrument was then withdrawn until its end was nearly reached, when the ring soldered on to it here rendered some enlargement of the incision necessary. No bad symptom followed the extraction beyond some rather severe abdominal pain at first; and the catamenia have since appeared.

Art. 207.—*Remarkable Case of Intussusception in an Infant.*

Reported by J. W. Wilson, M.D., F.R.S.E., Professor of Midwifery in Anderson's University, &c.

(*Glasgow Medical Journal*, February.)

The following case appears to possess such features of interest as to make it worthy of being placed on record. The history and symptoms of the case are briefly these:—"A female child, four months old, well nourished, and previously healthy, died after an illness of seven days, with symptoms indicating some mechanical obstruction of the bowels. The prominent symptoms during the illness were distressing and persistent vomiting, first of biliary, then of semi-feculent, matter; frequent muco-sanguineous discharges per anum; obstinate constipation; hiccup; gradually increasing tympanitic distension of the abdomen, &c. Till within a few hours of death the little patient appeared to suffer no pain, the countenance being always calm and placid. She took milk or other liquids eagerly. The vomiting was almost immediately renewed whenever either food or medicine was given. For five days before death there was no feculent discharge from the bowels. Although the abdomen was highly distended, there was no apparent tenderness anywhere on pressure; it was quite tympanitic, with the exception of the lower portion of the left side, where there was marked dulness on percussion.

"All attempts to evacuate the bowels by castor oil, magnesia, calomel, &c., having failed, opiates were administered at short intervals with the view of controlling the disordered peristaltic action. At the same time warm poultices, alternately with hot fomentations, were continuously applied over the abdomen. Warm olive oil, warm water, &c., were at intervals injected into the bowels through an elastic tube passed well up into the rectum. These means, unfortunately, proved of no avail. A medium-sized male elastic catheter was, on two different occasions, passed about six inches per rectum; but I suspect that it did not pass that length along the bowels, but had got bent or doubled upon itself. I should mention that Professor Rainy and Dr. Andrew Anderson saw this child in consultation with me.

"An inspection of the body was made twenty-four hours after death by Professor Rainy and myself. The following is a report prepared by Mr. J. R. Watt, my hospital assistant:—

"The body was in good condition, the abdomen discoloured and distended, which, on percussion, was found to be caused by the presence of gas. On laying open the abdomen, the viscera seemed to be normal in position and appearance, but no portion of the colon was visible. Two ligatures were applied below the pylorus, and the gut was divided

and carefully detached, when, on reaching the left ilio-lumbar region, a firm mass appeared, about five inches long and three in circumference, into which the lower portion of the ileum was continued. Here a couple of ligatures were applied, and the gut removed. On further examination, this enlargement was found to terminate inferiorly at the upper extremity of the first portion of the rectum; another ligature was placed here, and the abnormality lifted out. The whole of the colon was invaginated and formed this large mass, the external layer of which was formed by the descending colon which contained from without, inwards, in succession, the transverse and ascending portions, the terminal portion of the ileum and caput cæcum coli, which last seemed to have been arrested in its course downwards at the upper portion of the first part of the rectum on account of its size. It was laid open from end to end as the successive layers presented themselves, its colour becoming very dark on nearing the caput cæcum coli, the walls of which were much thickened, apparently from disease, and their internal structures obliterated. Thus, to all appearance, the invagination had originated with the caput cæcum coli, which gradually progressed until the whole of the colon was included in it."

Art. 208.—*On Imperforate Anus.*

By Christopher Heath, F.R.C.S.

(*The Lancet*, April 23.)

At a meeting of the Clinical Society, held March 25th, Mr. Christopher Heath read a paper *On Imperforate Anus*, and narrated five cases upon which he had been called to operate within the last two years. The first and fourth (both males) were examples of an anal *cul-de-sac* with termination of the rectum about an inch from the surface. In both cases the bowel was reached, in the first being drawn down and stitched to the margin; but both children sank, and in the last case the peritoneum was found to have been opened. The second case was the male child of a medical man, in whom there was no anus, but merely a dimple in the skin. Mr. Heath succeeded in reaching the bowel after cutting through some very dense structure, but was unable to draw it down to the skin. The child has thriven, and is now two years old. It has a bougie passed occasionally, and there is no great tendency to contraction. The third case was in a female child, thirteen months old when brought to Mr. Heath in 1868. There was no anus, but a small opening into the vagina, through which fæces escaped with difficulty, and in small quantity. An attempt had been made to establish an anus in the proper situation soon after birth, but without any good result. Mr. Heath repeated the attempt; but, failing to give relief to the distension of the abdomen, afterwards divided the perineum, and opened freely into the rectum from the vagina. The child recovered its health, and did well until last month, when it died somewhat suddenly with symptoms of enteritis.

Mr. Willett related the particulars of a case that had been recently under his care.

Mr. Thomas Smith said that, according to his own experience, closure of the lower part of the rectum was irremediable; that he had, however, sometimes afforded relief to patients by inserting a vulcanized india-rubber tube over a steel penholder, so that, scissors being used occasionally, the parts are kept sufficiently stretched to keep the canal patent. He believed, however, that in cases similar to those recorded by Mr. Heath, the mucous membrane being continuous with the vagina, the fæces will persist in coming through the original opening; and that hence, in cases where no anus exists, a director should be put into the fistula, which latter should be laid open from end to end. He thought the treatment adopted in Mr. Willett's case more likely to be productive of harm than good.

Mr. Callender said the occurrence of bleeding after these operations, and a difficulty in getting rid of the fæces, were points worthy of grave consideration, and that of two cases in which serious hæmorrhage occurred, one proved fatal.

The President agreed with Mr. Smith, that the retrospect of these cases was as a rule very unsatisfactory. He could speak of only one successful case, in which an artificial opening was made in the normal position of the anus. The operation was performed fourteen years ago, and the orifice still remained patent. It would be interesting to obtain trustworthy records as to how long persons lived in this condition, and if they often reached the age of puberty. He had also observed that in cases where the lower rectum was deficient, a large pouch was present, separated from the colon by an orifice; that in one instance this pouch was so enormously distended with fæcal matter as to simulate a large abdominal tumour; that an opening was eventually made, and large masses of fæces scooped out of the pouch, with an agglomeration of triple phosphates, that appeared to form a kind of nucleus. Two years have now elapsed since the operation, during which time the rectum has emptied spontaneously, and the patient has done well.

Mr. Barwell mentioned a case in which a continuation of the rectum occurred below the vaginal opening, and that he had punctured, and kept it open successfully.

Art. 209.—*On Polypus and Stricture of the Rectum.*

By Holmes Coote, F.R.C.S., Surgeon to St. Bartholomew's Hospital.

(*Medical Mirror*, March 1.)

Polypus of the Rectum.—Mr. Coote has not yet met with well-marked cases of polypus of the rectum, and this accords with the experience of most surgeons, including Mr. Syme. "The extreme rarity of this disease may be estimated from the statement of Sir A. Cooper, that in the whole course of his experience he met with only ten cases of it." He says it generally occurs in children, and very rarely in adults, and that the most advanced age at which he has met with it was twenty-two. Most of the cases which have fallen under Mr. Syme's observation were in persons who had attained or passed the middle

period of life. In five cases, which, by a curious coincidence, came under his care in little more than a fortnight, two were in adults and three in children. The disease presents itself in three forms. The first occurs before the ninth or tenth year. It is extremely soft and vascular, of florid red colour, and assumes the form of a worm two to four inches long, or a strawberry with a connecting footstalk, two or three inches long. The second occurs in adults; the growth is soft and vascular, and prone to bleed: it is lobulated, shreddy, and malignant looking, and it is best removed by ligature. The third form is of firmer consistence, and the symptoms are annoying rather than alarming. Mr. Syme removed one nearly as large as an egg; it had a cuticular covering, and appeared to have existed a long time.

Mr. Coote is of opinion that these cases are very uncommon, and may be often overlooked by a superficial examination.

Stricture of the rectum may be simple contraction, or contraction and narrowing, dependent on cancerous or other morbid deposit. The long persistence of a fistula in ano will lead to contraction; so also will ulceration of the mucous membrane, syphilitic or otherwise. In other cases the stricture is imaginary. Mr. Coote lately examined a patient in whom the lining of the bowel was perfectly healthy, and the supposed stricture was dependent only on chronic constipation. The author cannot agree with Mr. Nunn, that most of the non-malignant strictures of the rectum are of syphilitic origin. Catarrh of the rectum is uncommon even in females. In cases of stricture which have fallen under Mr. Coote's observation, in females, the cause has mostly been an hypertrophied and tuberculated condition of the mucous membrane of the bowel, which he has, under all circumstances, found most difficult to cure.

But stricture of the rectum, dependent on malignant disease, is out of all proportion the more frequent in adult life. It occurs in the same part of the gut as the simple stricture; but it is not so limited or regular in extent. The disease is sometimes confined to one side of the gut, at others it affects the whole circumference.

In some of these cases there are an assemblage of flat cutaneous growths around the anus, in no way resembling mucous tubercles, but elongated and flattened processes of the skin, the presence of which generally indicates contraction of the canal about one inch and a half from the anus. In cancer the anus is generally, but by no means always, free from disease, and the existence of these long pendulons should be always regarded with suspicion.

In the investigation of the rectum for supposed stricture, the surgeon should remember that the symptoms may proceed from many causes, that the promontory of the sacrum has been mistaken for stricture, cures of which have been mentioned by Mr. Copeland, also by Mr. Syme and others. Spasm may exist in various conditions of the bowel, but that can hardly be included under the head of stricture. The narrowing may depend on long-continued inflammation of the parts, attended with general consolidation of the contents of the pelvis, and the formation of numerous fistulæ, a condition easily recognisable, but in other cases the prevailing cause is cancer.

One other source of contraction already alluded to is that in which

the canal of the bowel is filled by a growth of tubercles. It has been described by a once popular writer, Mr. Calvert, who says: "In some cases (of contraction of the rectum) it is chiefly owing to a thickened and indurated state of the mucous membrane, arising from inflammation, or some chronic alteration of texture; but that when the disease has existed a considerable time, the mucous, cellular, and muscular coats become more or less affected, so that, on dissection, it is often impossible to determine in which the disease originally commenced." He describes other cases in which the cavity of the rectum is nearly obliterated by *the presence of hard, painful tubercles*. This disease, he observes, bears some resemblance to the first stage of malignant stricture, at least as it appears in some cases, but it is evidently quite of a different nature, as it is easily cured by compression.

In all cases of stricture of the rectum, particularly in the non-ulcerated state of the bowel, the maintenance as long as possible of the continuity of the canal by the introduction of bougies, is a measure which suggests itself to all surgeons, and in some cases an unexpectedly large amount of benefit is obtained by means of direct pressure. The instrument should be of such a size as to pass, well lubricated with oil, without much pain or difficulty. When it has remained for half an hour or more, it should be removed, and passed again the next day, the same sized bougie being continued for several days. Mr. Calvert warns surgeons against the possibility of errors; not only has the sacrum been mistaken for stricture, but also pressure on the rectum by a retroverted uterus, by an enlarged ovary or other tumour. He also states that he has seen the bougie employed a long while, in one example, where the real disorder arose from a biliary concretion imbedded in the parietes of the rectum.

Art. 210.—*Removal of the Lower End of the Rectum, with the Prostate, Prostatic Urethra, and Part of the Neck of the Bladder, for Epithelioma.*

By Professor Nussbaum, of Munich.

(*British Medical Journal*, January 8.)

Professor Nussbaum has reprinted from No. 44 of the *Aerztliches Intelligenz-Blatt* an account of an operation which he believes to be unique. In August, 1863, he published four cases which showed that, after the removal of cancerous rectum, patients, who were previously at death's door, lived many months, and even years, in ease and comfort, before a relapse occurred. He several times removed a portion of the bladder as large as a dollar, along with cancer of the rectum; and the wound healed, as after lithotomy, without leaving any urinary fistula. When cancer of the rectum, he says, recurs after operation, it does so after a longer interval than most other cancers. Emboldened by his success, he has operated in cases where death was apparently imminent, and where the cancer did not extend higher than four inches; so that he had a chance of attaching the healthy bowel to the sphincter ani. This sometimes proved very difficult. The subject of the present his-

tory was brought to Dr. Nussbaum in October, 1866. He had had no relief to the bowels for sixteen days. No enemata would pass. Repeated hæmorrhages had reduced him greatly, and the urine was often bloody. To make an exploration, Dr. Nussbaum was obliged to push his finger forcibly through the cancerous stricture. Copious hæmorrhage followed, both by the rectum and through the urethra. Part of the urethra, the whole prostate, and a portion of the neck of the bladder were involved in the cancerous mass. This extensive disease deterred him from operation; and he at first determined to attempt, by the use of bougies, to restore a passage for fæces, and, by means of perchloride of iron and compresses, to try to arrest the hæmorrhage. However, after two days, the patient's sufferings were so great, that he begged, at any risk, that the operation might be done. On October 14th, the patient being deeply chloroformed, Dr. Nussbaum began the operation by making two semicircular incisions round the anus; and, carrying the finger upwards, he separated the healthy fibres of the sphincter from the diseased as far as possible. Healthy tissue was found at a depth of four inches. The prostate and neck of the bladder being involved, were removed, with of course the prostate portion of the urethra. There was much bleeding; but after four arteries had been secured, iced water abated this. Dr. Nussbaum then dragged down the healthy bowel, severed it completely from the diseased tissues, and secured it with ten button-sutures to the skin; and closed the perineal wound with four deep sutures, after introducing an elastic catheter through the wound into the bladder. The healthy bowel was enormously dilated; for the stricture had existed five years. The disease was epithelioma. The patient was much distressed; but after being put to bed and stimulants having been given he rallied. For some days the thermometer marked 104 deg. Fahrenheit, and the pulse was 130 to 140. Urine passed through and alongside the catheter; it was blood-stained and very offensive. Besides slight shiverings, he had two distinct rigors; and the catheter became unbearable. Dr. Nussbaum removed it, and also two perineal sutures; and syringed the wound with water only. He had no further rigors. There was secondary hæmorrhage on the fifth day, arrested by a large plug of charpie in the new rectum. After this nothing remarkable occurred. The sutures were all removed on the eleventh day. Dribbling of urine soon ceased, and from time to time the patient passed urine freely through the new anus. He always held the vessel to the penis, as he had great irritation about the fossa navicularis, and always felt as if the urine passed the natural way. As the wound healed, a valve-like communication formed between the bowel and the bladder, allowing the urine to pass by the anus, but not fæces to enter the bladder. Every two or three days he had a solid stool, and every twenty or thirty minutes had to pass urine. After the sixteenth day, no urine came through the perineal wound. At the end of four weeks, he got up for an hour a day; and provided he passed urine once or so in an hour, felt no incontinence of urine, flatus, or fæces. In December he left Munich, but called on Dr. Nussbaum three months afterwards, and was well satisfied with his condition. He looked well and strong, and occasionally worked at his trade. Every year he came to see Dr. Nussbaum, and was always happy and comfortable. He

had not complete retention for more than an hour at a time; otherwise, the fæcal and urinary apparatus worked well. Last year, he said he could hold his urine two or three hours. Unfortunately, the apparent improvement was due to a return of the disease; and he succumbed to the malady at last, three years having been gained by the operation.

Art. 211.—*On Carcinoma of the Mammary Gland.*

By W. Scovell Savory, F.R.S.

(*Medical Press and Circular*, March 16.)

Mr. Savory says that, as a general rule (exceptions are too rare to invalidate it) cancer of the breast, when excised, returns and destroys the patient. But excision may slightly prolong life, as well as remove the disease for a time as far as its apparent features are concerned. Sibley found that patients operated on lived fifty-three months, others only thirty-two months; but then of course only the more favourable cases were operated on. Sibley says the disease usually recurs in about fifteen months after operation. Ill-defined tumours are the worst. There are many degrees of induration. The stony indurations are slowest in growing. A favourable sign is when the skin moves freely over the surface of the tumour. If the skin looks coarse and feels rough it is a bad case. Should the skin be fixed on the tumour, it is discoloured. Ascertain whether the tumour moves freely on the pectoral muscle. In the worst cases. the whole mamma, with the skin around it, is converted into a solid, uniform lump, blending with the muscle below. Glandular affection in the axilla tells strongly against the success of the operation; but it may sometimes be removed. Glands in posterior triangle of neck are sometimes affected in bad cases. The more rapidly the disease is advancing, the worse the prognosis. Cancers are less active in the aged, and sometimes even appear inclined to wither up. The operation on old persons is sometimes needless. The whole gland must be extirpated in cancer, and portions of the pectoral muscle even excised, when it is affected.

Art. 212.—*Removal of Uterus and its Appendages.*

By M. Péan.

(*Gazette des Hôpitaux*, No. 143, 1869.)

The following short notice of a remarkable operation, performed by M. Péan, the subject of which was shown to the Academy of Medicine in Paris, at its meeting on December 8th, 1869, is from the pen of Dr. Revillout:—

The tumour is multiple, containing, 1. A very large cyst of the left ovary. 2. The uterus itself hypertrophied, containing a cyst, and extending up as far as the umbilicus. 3. A fibrous tumour of the right ovary, and a cyst of the right Fallopian tube. . . . . Before the opera-

tion, M. Péan had diagnosed the existence of a moveable fibrous tumour, independent of the ovarian cyst. He had also made out by vaginal examination that the uterus was hypertrophied, but he did not know to what amount, and could not make this out on account of the adhesions which bound the tumours to each other.

When the cyst of the left ovary became visible through the incision in the abdominal wall, M. Péan began to remove it in his usual manner, stopping the hæmorrhage by long cauteries, heated to whiteness. After having got out a large part of the cyst, he arrived at the uterus, which he found to be greatly enlarged, soft, fluctuating, and everywhere adherent. These adhesions were very vascular, and could not be broken down without excessive hæmorrhage, which even the cauteries failed to arrest. In such circumstances, no resource remained but to remove the diseased uterus along with the other tumours. This M. Péan did not wish to do, through the neck of the uterus, as it, excessively hypertrophied, was as large as a fist. He preferred to carry the section through the vagina itself, and he succeeded in passing across the vagina from before backwards, and through the abdominal wound, a double thread, by which he tied the tumour in two halves; the one on the left side secured the great ovarian cyst, the other one included all the vagina corresponding to the uterus, and isolated, besides that organ, the right ovary and Fallopian tube. After having tied the two ligatures, M. Péan cut off all the tumours close above them, and then by strong pulling brought the pedicle (such as it was) to the abdominal wound. This he did not close at a point opposite to the pedicle. Three india-rubber tubes were passed down to the bottom of the cyst to allow escape of discharge. A good recovery took place.

Art. 213.—*On Points to be observed in Ovariotomy.**

By D. Lloyd Roberts, M.D., M.R.C.P. Lond., Physician to St. Mary's Hospital, Manchester.

(*The Lancet*, February 15.)

"All operations involving abdominal section should be performed in a room, light, airy, lofty, and free from draughts. In hospitals a ward should be specially and exclusively appropriated to the purpose, the walls of which should be painted, to admit of frequent washings, and obviate to the utmost extent the absorption of putrid effluvia, and the consequent risk of pyæmia or surgical fever. For the same reason, the ward should contain as little furniture as possible. In short, every available precaution should be taken to avoid an unhealthy atmosphere, a condition well known to be eminently prejudicial to the subjects of abdominal operations.

"The *operating-table* should be opposite and near a window. The patient should be well and completely covered with flannel for warmth,

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* Abstract of a Paper read at the St. Andrews Medical Graduates' Association.

and only the abdomen and face exposed. The bed, thoroughly warmed to receive the patient, should be at hand; and she should be lifted into it with the utmost care, as the slightest concussion is liable to bring on vomiting.

"*Temperature of the room.*—The high temperature advocated by the earlier operators is wholly unnecessary, and even injurious, as it increases the risk of chloroform accidents. A temperature of 64° I have found most favourable.

"*Anæsthetics.*—I have invariably used chloroform. From its tendency to excite vomiting, which is a very formidable complication in all abdominal sections, it is doubly important that the patient should be brought and maintained under its influence by as small a quantity as possible. This is the primary object to be kept in view; and whatever be the apparatus used, careful and experienced administration is essential. Mr. Spencer Wells informs me that he has used methylene in preference to chloroform for the last two years. Dr. Keith has employed sulphuric ether, and the very little vomiting which resulted, added to the success of his operations, appear to constitute a strong recommendation in favour of that anæsthetic.

"*Incision.*—Considerable difference of opinion existed among the earlier operators upon this point. It may now be regarded as established, that the extent of the incision should be determined not only by the size, but also by the nature and consistence of the tumour, the small incision being first practised, and enlarged according to the necessity of the case. When the contents of the tumour are fluid, they can be easily drawn off by the canula, the cyst, thus diminished in size, following the slightest traction through a comparatively small incision. On the other hand, if the tumour is solid and does not admit of reduction, it is better to enlarge the incision than violently to drag a solid, unresisting mass through an opening wholly inadequate for the purpose. The extent to which compound cystic tumours may be reduced by the method adopted by Mr. Wells in emptying one cyst through another by the trocar, is surprising. In making the superficial incision, it is well to avoid opening the peritoneum until quite sure there are no bleeding vessels; which, if discovered, should be twisted or tied. The incision should be made down to the peritoneum without a director. This membrane can then be pinched with the forceps, the fold thus produced divided with the knife, and the director inserted. The membrane can then be divided upon it, above and below, till the incision is co-extensive with that in the abdominal wall. This first incision may reach to two inches above the pubes.

"*Adhesions.*—Before tapping cyst the hand should be passed through the incision and over the tumour to ascertain if there be any adhesions. If so, they may be separated by the hand, by the handle of the scalpel, or even by dissection. Adhesions to the bladder, liver, intestines, omentum, and abdominal parietes are dangerous in the order enumerated. The separation of adhesions to the liver, intestines, or bladder is better effected by careful dissection, great care being necessary in order to avoid denuding the viscus of its peritoneal coat or perforating the intestine. Bleeding vessels are best treated by actual cautery or by ligature, cutting the ends close, the latter being the safest practice.

"*Pedicle.*—There are now various methods of treating the pedicle—viz., by clamp, ligature, actual cautery, écraseur, pocketing the pedicle (Storer), and the seroso-plastic method (Maslowsky), each possessing peculiar advantages according to the nature of the case. When the pedicle is sufficiently long, and not very broad, and can be brought externally without undue traction on the uterus, the clamp, as first used by Mr. Hutchinson, and afterwards more extensively by Mr. Spencer Wells, offers the best method of treatment, as all suppuration into the abdomen and pelvis is avoided, and the risk of septicæmia, &c., diminished. The ligature is applicable in all cases, whether the pedicle be long or short. The practice, however, of tying the pedicle, bringing the ends of the ligature externally, and allowing it to slough its way through, is not only tedious, but involves the risk of pyæmia, pelvic and peritoneal mischief. To obviate these inconveniences, Dr. Tyler Smith has revived the bold and ingenious practice of ligaturing the pedicle, cutting the ends close, returning it into the abdomen and closing the wound, and this treatment has been most successful in his hands. Those who advocate the use of the cautery do so on the supposition that the ligature, if returned into the abdomen, may prove a source of irritation, and this plan has also proved very successful in the practice of Mr. Brown, Sköldberg, and others. It is most applicable in short, thick pedicles, where there is little adipose tissue and the vessels are of small calibre.

"*Cleansing the abdominal cavity.*—This should be done with sponges, which ought to be of moderate size, warm, soft, and perfectly clean. The viscera should be disturbed as little as possible, but it is very desirable that all clots and fluid matter should be removed.

"*Bringing of wound together.*—This may be done by means of pins, silk, or silver wire; the latter, in my opinion, being the most preferable, as it keeps the parts in better apposition, produces less irritation, and, if necessary, can be kept longer in than pins or silk. The peritoneum should be included in the ligatures, and there should be three sutures to an inch of surface.

"*Dressing the wound.*—The wound should be still further supported with crossings of plaster, over which a layer of cotton wool may be placed. There is no necessity for a bandage as a support, as it produces in many cases a good deal of discomfort, is very apt to become displaced, and prevents a ready examination of the wound.

"The *after-treatment* may be conducted on general principles. The patient should have as little food as possible for the first forty-eight hours, so as to obviate the tendency to sickness or vomiting. The food should be of a fluid and bland character, such as toast-water, milk-and-water, &c., in small quantities and at divided intervals. Pain, restlessness, and vomiting are best controlled by opium given by the rectum in moderate doses. If the patient goes on well for three or four days, she may be allowed a little light food, such as chicken-broth, beef-tea, sago pudding, and good coffee, with milk and dry toast; a little Champagne or good sherry with water may also be allowed. The bowels should be relieved about the fifth day by enema, which after this may be used every other day. The periodical use of the catheter should be enjoined every four hours the first few days after operation. The ligatures may

be removed about the fifth or sixth day. A patient who has undergone this operation should be provided with a day and night nurse, and in hospitals they should have nothing to do with the dressing of other cases."

(c) CONCERNING THE UPPER EXTREMITY.

ART. 214.—*On some Peculiar Results of Injury to Digital Nerves.*

By W. M. BANKS.

(*The Liverpool Medical and Surgical Reports,* vol. iii.)

The following cases are given by Mr. Banks as examples of great pain and suffering consequent upon any trifling injuries to digital nerves, which were relieved in each case by the excision of a portion of the affected nerve. These cases occurred in the practice of Mr. Bickersteth :—

"On Oct. 30th, 1867, a young married lady consulted Mr. Bickersteth, complaining of great pain in the forefinger of the left hand. About a fortnight previously she had given herself a pretty severe cut with a breadknife. The wound had healed well and the cicatrix was still quite soft. It was a little in front of the metacarpo-phalangeal flexure of the finger, and was partly on the palmar and partly on the outer aspect of the digit. It was a slanting cut, and its deepest part was just over the outer digital artery and nerve of the forefinger. Although the wound had healed well the patient had suffered intense pain in the finger, so severe as even to deprive her of sleep ; indeed she had not had any rest at night for a fortnight. The finger was somewhat swollen and stiff, and had a peculiar glazed look about it, which pointed to some injury of the nerve. It was therefore resolved to lay bare the digital nerve at the site of injury, and remove a portion of it. The soft cicatrix was taken up with a probe, and a small linear incision was made nearly at right angles to it, over the junction of the nerves. With some little dissection the nerve was reached, and a portion of it, along with some little adherent pieces of fatty tissue, removed. The accompanying artery was cut, but soon ceased bleeding on the application of cold. The little flaps were then nicely adjusted with sticking-plaster and dry lint put on. On examining the pieces which had been removed, two of them were found to contain portions of the nerve, one about one-fifth of an inch long, the other much smaller. Nothing could be detected wrong with them after a most careful examination both by the eye and with the microscope.

"The patient returned on Nov. 2nd, three days after the operation. The wound was healing rapidly, the edges having united at once. *She had suffered no pain whatever*, and had slept well at night. Sensation was lost along the greater part of the outer side of the finger.

"On Nov. 8th the wound was quite healed; the patient had suffered no pain since the operation, and the swelling and glazed appearance of the finger had greatly, but not quite completely, disappeared. Sensa-

tion along the outer side of the finger was decidedly improving, so that the non-sensitive portion was now confined to a narrow strip on the outer edge of the finger, reaching from the second joint nearly to the tip.

"On Sept. 19th, 1868, Mrs. —— consulted Mr. Bickersteth. She was a healthy woman, sixty years old, but very active and vigorous for her age. In the previous May she suffered from a whitlow situated at the base of the ring finger and adjacent portion of the palm of the right hand. To relieve this case, incision was made by her medical attendant on the inner side of the base of the ring finger, just below the cleft between it and the middle finger. She recovered perfectly from the whitlow—*i.e.*, there was no stiffness or contraction of the tendons as a result of the whitlow, but yet the hand did not regain its former strength, and soon the ring finger became the seat of excessive pain, which in time affected the others also. The pain next extended up the arm, occasionally even as far as the shoulder. On examining the hand, the fingers were seen to be somewhat stiffened and attenuated, and presented—especially the forefinger—the peculiar glossy appearance of the skin mentioned in the previous case. The affected arm was distinctly smaller than the other, and had a wasted appearance. The constant worry of the pain, and the annoyance arising from the inability to use the hand, had considerably impaired the patient's health. On looking carefully at the site of the whitlow, the cicatrix of the incision above mentioned was seen to be seated exactly over the digital nerve supplying the inner side of the ring finger, a little beyond the point where it separates from the nerve supplying the adjacent side of the middle finger. It was considered that the nerve had been injured at this point, and that a portion of it should be excised, the patient being willing to endure any operation in consequence of the increasing severity of the pain.

"On Sept. 22nd chloroform was administered, and a tourniquet having been fastened over the brachial artery in order to prevent any bleeding from interfering with the ease of the dissection, a good long incision in the line of the cicatrix and subjacent nerve was made, and the nerve having been readily found, about half an inch was cut out. Several Pacinian bodies were dissected off the sheath of the flexor tendons, which, as well as the digital artery, was left carefully intact. The wound was brought together with three stitches, sealed up with a little scraped lint and styptic colloid, and a small splint put along the back of the hand and two first fingers.

"On Sept. 24th, two days after the operation, the patient called. The wound was still covered with a crust of lint and colloid, and there was no inflammation of the adjoining parts. She says that now *she has no pain in the fingers and hand, and none in the arm as far as the elbow*, although the shoulder and upper arm are still painful, but not exceedingly so. The inner side of the forefinger feels 'queer' and numb, but sensation is not completely lost, while the tip is everywhere quite sensitive.

"On Sept. 29th, strapping and water dressing were applied to the wound, which was not completely united but looking very well. There has been no return of pain to the hand or forearm, and in the shoulder

and upper arm the pain is now only occasional. She was directed to rub with a soothing liniment, and ordered a tonic containing quinine and phosphate of iron.

"On Oct. 15th, the patient was seen for the last time. The wound had been healed completely for about ten days. The backs of the fingers do not present the same glazed, tight, thin-skinned appearance which they formerly had, but the skin looks thicker and more natural, and has little wrinkles in it. The acute pain is quite gone and the patient sleeps well, her only complaint being of a curious feeling along the upper and inner part of the forefinger, which the excised nerve had supplied, and of a little occasional aching in the shoulder. Her general health has greatly improved, and she can pick up things with the affected hand, and is rapidly regaining the use of it."

Mr. Banks refers to cases reported by Mr. Annandale and M. Berard, and concludes with the following remarks:

"In these cases of injury to digital nerves, there are one or two points of interest which may be noticed. In the first place, as was seen, Mr. Annandale in his case detected a certain amount of thickening and congestion of the nerve at the site of injury, and he also believed that the Pacinian bodies were increased in numbers and size. According to Béclard and other French authors who have paid some attention to the subject, after puncture of a nerve there remains either in the whole thickness of the nervous cord, or, if the puncture has been very limited, at 'one point of its circumference only, a hard opaque swelling of a fibrous consistence, which is invariably formed by a thickening of the fibro-cellular tissue. In the portions of excised nerve which I examined, I must frankly admit that I could not find any change; but in one case under Mr. Bickersteth's care, where a hard cone-like substance was removed, there was no doubt that the Pacinian bodies were, if not increased in number (which I am strongly inclined to think they were), increased in size, as they could be picked out from among the fatty tissue with the greatest ease. In a case of injury to a digital nerve, followed by great pain in the arm and atrophy of the affected finger, which was admitted into the Royal Infirmary here some time ago, the finger was removed at the patient's urgent desire. A complete cure resulted, but I regret that I am unable to give the details of the case. However, I dissected the amputated finger very carefully, and certainly the Pacinian bodies were capable of being displayed with an ease which is not the case in a perfectly healthy finger. Until, however, I could see a few more such cases, I should not be inclined to make any distinct assertions as to the increase in size and number of the Pacinian bodies following nerve injury, as it is a difficult point to determine. My impression, however, is that such increase does not occur.

"In the second place, it is plain that the plan of excising a portion of affected nerve is an immense improvement upon amputation, in all those cases where the nutrition of the finger has not been so much interfered with that general atrophy has resulted. If a tourniquet be applied so as completely to keep the wound free from blood, it is not by any means difficult to perform, and the advantages are so obvious as to require no comment.

"Lastly, there are some curious points connected with the manner

in which sensation was affected by the excision. In the first case, a portion of the nerve supplying the outer side of the forefinger was removed to the extent of fully more than a quarter of an inch, and yet on the third day sensation was lost, not along the *whole, but only along the greater part* of the outer side of the finger. On the ninth day the non-sensitive portion was confined to a narrrow strip on the outer edge of the finger, reaching from the second joint nearly to the tip. Again in the second case, where the digital nerve supplying the inner side of the ring finger was removed to the extent of nearly half an inch, on the second day after the operation the part supplied by the nerve felt numb, but was *not quite destitute of sensation*, while the whole tip was quite sensitive. These points seem worthy of notice, as showing that the branches of the digital nerves extend so completely round the fingers, that if one nerve be divided, the branches from the opposite one are sufficiently numerous and their connexions with the terminal branches of the divided nerve sufficiently free, to maintain partial sensibility even over the part of the finger supplied by the divided nerve."

ART. 215.—*Aneurism Cured by the Subcutaneous Injection of Ergotine.*

By Professor LANGENBECK.

(*Berlin. Klinik. Wochenschrift.*)

A man, aged forty-five, began to suffer in the summer of 1864 with severe pains in the right arm; in the course of a few months a pulsating tumour appeared in the neck. It was evident that the subclavian and innominate arteries were dilated. Dr. Jacobson, of Copenhagen, applied the moxa with some benefit. The tumour, however, increased, and in January, 1869, it had attained the size of the fist, and pulsated strongly. There was also pulsation in the carotid. The pain was very severe; the arm and hand weak and atrophied. On the 6th of January the aqueous solution of secale was injected. Immediately after the injection the patient fell asleep, and in the evening the pulsation in the tumour was much feebler, and there was less swelling. From the 6th of January to the 17th of February the secale was injected about every third day. At the last named period the power of using the hand had returned considerably. The pulsation had not disappeared, but it was very weak, and the tumour was very much smaller.

In another case, the patient, a male, aged forty-two, after a wound at the bend of the arm, noticed a pulsating tumour. The tumour was small, and found to be an aneurism of the radial artery. The patient stated that it had existed for twenty years. The Professor injected the aqueous solution of secale under the skin, in the vicinity of the aneurism. The next day the tumour had very much diminished; by the eighth day it had disappeared.

The effect of the secale in these cases was very marked—an aneurism of the radial artery disappearing after one injection, and a large one of the subclavian in less than six weeks. Practitioners who have seen

many cases of aneurism will scarcely believe that the secale can effect what the Professor states. The remedy, however, comes to us under the sanction of such a great name, that we are bound to give it *a trial.* If it succeed even in checking the increase of the tumour, a very great boon will be conferred on suffering humanity. In 1836-7 papers were published in one of the German medical journals, on the utility of injecting the tincture and the infusion of secale directly into the uterus in protracted labour, in menorrhagia, leucorrhœa, and in a variety of the diseases in which it was thought advisable to excite uterine action. The injection of the infusion into the circulation of dogs has been known to cause obliteration of the vessels.

Art. 216.—*Dislocation of both Bones of the Forearm Forwards.*

By Dr. Forbes.

(*American Journal of the Medical Sciences*, October.)

At a meeting at the College of Physicians of Philadelphia, on May 5th, Dr. Forbes reported the following case of this rare accident:—

"It was stated by Petit that a dislocation of both bones of the forearm forwards could not take place without an accompanying fracture of the olecranon process of the ulna; and this assertion has been repeated by many authors in systematic works on surgery.

"Malgaigne has, however, more recently collected six well-authenticated cases of this dislocation without fracture.

"A blow upon the olecranon from behind, when the forearm was flexed upon the arm, seems in each case to have been the cause of the accident.

"On the 10th of December I was called to see M. M., a boy about twelve years old. His accident had occurred but a short time previous to my arrival. He had been exercising himself in a gymnasium, and the proprietor, who saw him at the time, stated that while going up a ladder hand over hand he fell, striking, while falling, the back of his elbow 'at the tip' against the margin of a table, the fall (which was only about two feet) having taken place just as he had drawn his head near one round of the ladder which he held in the grasp of his right hand, and while in the act of extending the left hand to seize the round above.

"On examination the right forearm was found rigidly fixed at not quite a right angle with the arm. The arm was shortened and the forearm lengthened. The hand was supinated and the tendon of the biceps somewhat tense. The olecranon was discovered lodged distinctly in front of the humerus and above the lower margin of the trochlea, and the head of the radius separated from the capitellum by a depression in which the finger could be placed. The dislocation was complete.

"While he was under the influence of ether I flexed the forearm on

the arm, so as to disengage the posterior and upper margin of the olecranon from its position in front of the humerus, and while holding the arm firmly, both radius and ulna, being still strongly flexed, were brought downwards and backwards, and the reduction was readily effected.

"The general gonflement, tenderness, and discoloration of the entire extremity were excessive for some three weeks after the accident, and it was not until six weeks had elapsed that complete restoration of all the movements of the joint was accomplished, thus indicating how extensive must have been the laceration of the neighbouring parts.

"Boyer, Velpeau, and Malgaigne have each recorded a case of this dislocation with fracture of the olecranon. In Boyer's case the man had fallen from a height; the olecranon could be felt drawn up between the condyles, while the coronoid process and radius were lifted up by the brachialis anticus and biceps above the condyles of the humerus. The dislocation was readily reduced but easily recurred. The patient died of other injuries, and the post-mortem examination revealed a fracture of the base of the olecranon extending obliquely downwards and backwards.

"Velpeau's case was of eight years' standing when he saw it; the olecranon was not united to the ulna by bone, the connexion being ligamentous, as we often find between the fragments of a broken patella; the radius and ulna rested on the anterior surface of the humerus, yet the patient had a very useful limb."

Art. 217.—*Dislocation of the Atlas upon the Axis.*

By Dr. Forbes.

(*American Journal of the Medical Sciences*, October.)

At a meeting of the College of Physicians of Philadelphia, May 5th, Dr. Forbes exhibited a specimen showing this lesion, and made the following remarks:—

"The specimen which I hold in my hand was removed from the body of a man who committed suicide by hanging. Having tied a silk handkerchief around his neck and fastened the end of it to a small part of a gas-pipe projecting from the wall of his room, and which was not higher than his head, he had apparently jumped up, and having raised his feet at the same moment, the left side of his head had been brought forcibly against the wall and the dislocation thus produced. He was found suspended by the neck with his feet on the floor, dead. His nurse had been with him just fifteen minutes before, and had been sent to get some iced water; during his absence the patient accomplished his destruction. On his return with the iced water, seeing the man suspended, the nurse seized him by the body and held him up, and called aloud for help. I heard him from a neighbouring room, and, running in, cut the handkerchief, the nurse still holding him up. Life was already extinct. On post-mortem examination this specimen was obtained: The odontoid process was still held in position by the trans-

verse ligament, but the two check ligaments were found twisted around the top of the odontoid process, and the lateral displacement of the first vertebra was so great that the medulla spinalis was completely crushed. The inferior articulating facets of the first vertebra were entirely removed from the superior articulating facets of the second vertebra.

"The case is an interesting one in a medico-legal point of view, the man having hung himself, yet his feet being found on the floor.

"The rotary motion of the head is performed chiefly by the first vertebra moving on the second, and when this motion is forced beyond its limits the check ligaments may be either broken or twisted; if broken, and the chin at the same time elevated, there will be a displacement of the odontoid process by its either slipping under the transverse ligament or else rupturing it. Petit mentions the case of a child who was instantly killed by being lifted up by the head; the perpendicular impulse broke the check and accessory ligaments, and allowed the odontoid process to slip under the transverse ligament without breaking it, the severe pressure of the dislocated process on the medulla spinalis causing immediate death.

"Malgaigne records a case of rupture of only one of the check ligaments, which yet allowed a dislocation of the odontoid process beneath the transverse ligament without rupturing it; the circumstance of only one check ligament being broken prevented that degree of pressure on the medulla spinalis which would otherwise have caused instant death. The patient lived twenty hours."

Art. 218.—*Extirpation of Clavicle.*

Under the care of Dr. Britton, at the Driffield Cottage Hospital.

(*Medical Times and Gazette*, May 21.)

The following case is placed on record by Dr. Britton:—

Samuel S——, labourer, aged thirty-five years, has had pain in the left shoulder for some years, which he ascribed to rheumatism. He noticed a small swelling on the left clavicle in the summer of 1868, which remained in much the same state until October, 1869, since which time it has rapidly increased in size, and quite prevented him from working.

March 9th, 1870.—He came into the Driffield Cottage Hospital, when there was found a hard swelling about the size of a large orange, but oval in shape, on the left clavicle. It is as hard as bone, and the surrounding structures seem connected with it, as it is almost immovable. The pulsation of vessels going into it can be felt if hard pressed on the lower side. He has no pain in the tumour, but complains of pain and numbness in the shoulder, scapula, and arm. The hand and arm are slightly swollen, and turn quite blue on hanging down. The sternal end of clavicle seems loose, and feels as if it grated on movement. There is a sharp grating sound heard all over the chest on auscultation, which is loudest over the sternal articulation of clavicle. He says he feels as if he was choking, and his breathing is much impeded. It does not interfere with deglutition; it hurts him much when he coughs, the cough being of a spasmodic character. He says he always feels as if he had something in his throat which he could not

get behind by coughing. His general health is bad, in consequence of being badly fed from inability to work. Family history good.

April 16th.—His general health having much improved and the tumour also being much larger, I decided to remove it. Chloroform was administered by Mr. Higgens, late house-surgeon of Guy's Hospital, and I was also assisted by Drs. Nelson and Allison, of Bridlington. I made an incision through the skin the whole length of the clavicle, dissected down at the acromial end until I was able to get the handle of a scalpel underneath the bone, when I sawed through the bone upon it at about an inch from the end. I then dissected downwards and forwards towards the sternal end. There was very great difficulty in doing this, as the surrounding structures were in a semi-cartilaginous state, and I could not raise the bone from its connexions with the chest. The subclavian artery could be seen beating under the fascia, but it was not exposed. There were many large vessels running into the tumour, which caused a somewhat large flow of blood. I used torsion for all the vessels, no ligatures. I put silk sutures in the incision through the skin, plasters between, and a wet compress over all.

17th (eighteen hours after the operation).—Has had a good night; no pain; pulse 100; tongue clean; skin rather hot and feverish; is very thirsty; he can breathe much more easily, and without that rasping sound.

18th (forty hours after operation).—Had a good night; no pain; pulse 88; tongue clean; the feverishness is gone. Wound dressed; no discharge whatever, as it has all healed by the first intention except the cicatrix between each suture. I removed sutures, and dressed with plaster only. To have a dose of castor oil.

27th.—Healed; no pain.

30th.—Has been out of doors; can swing his arm without pain. It only feels rather bound down at the shoulder, or, as he says, it feels stiff.

On examining a portion of tumour under the microscope, it was found to be cancerous. The remarkable success in the healing process Dr. Britton ascribes to the torsion of the vessels and the pure air of the hospital. Dr. Britton kept the patient in a room at a temperature of 65° for a few days, as he was afraid of lung complications.

(D) CONCERNING THE LOWER EXTREMITY.

ART. 219.—*On Rachitis.*

By HOLMES COOTE, F.R.C.S., Surgeon to St. Bartholomew's Hospital.

(*St. Bartholomew's Hospital Reports*, vol. v.)

After describing the three acts upon which the physiological growth of bone depends, Mr. Coote points out, following Volkmann, the disturbing influence which rickets exercises upon each. "The cell growth" [from the periosteum] "which precedes ossification goes on rapidly, while the deposit of earthy matter is insufficient, or ceases entirely. Irregular and often large spaces are formed in the medullary structure. The epiphyseal cartilage becomes swollen and enlarged, and forms those peculiar elevations which have induced people to speak of 'double joints' in connexion with this disease. Swellings are also seen in the ribs at

their junction with the cartilage." A peculiarity of rickety bones is seen in the "extension of the medullary spaces beyond the line of ossification into the cartilage itself, so that irregular outgrowths of red colour are seen protruding into the blue cartilage." With regard to the treatment of rickets, Mr. Coote lays great stress upon the importance of change of air, especially recommending a seaside residence, and of suitable food and clothing. He objects to the use of tonics, including cod-liver oil, during the acute stages of the disease; thus radically differing from his colleague Dr. Gee, who, it will be remembered, in the last volume of the *Reports*, spoke of cod liver oil as "a pharmaceutical agent worthy of a place beside iron, Peruvian bark, and mercury," and declared that no time should be wasted over symptoms, but the oil administered from the first, and continuously. Mr. Coote advises the use of movable couches, and with some restrictions, that of splints or other supporting apparatus. Where the deformity persists in after life he has seen advantage from the sub-periosteal removal of a wedge-shaped piece of bone.

Art. 220.—*On the Value of Extirpation of the Calcaneum.*

By Professor Polaillon.

(*Archives Générales,* September and October, 1869.)

Professor Polaillon, after giving an analysis of the recorded cases and a description of the operation, thus sums up his opinion as to its value and indications: (1) Extirpation of the calcaneum ought to be accepted in practice, as it allows of the preservation of a foot that is very useful in standing and walking. (2) Its success varies with the age of those operated on. In children and adolescents it succeeds in eight out of nine cases, furnishing excellent results as regards the ulterior employment of the limb. In the adult it has failed in half the cases, and when it succeeds its results are less excellent, the foot accommodating itself ill to the loss of the calcaneum at the age when the period of growth of the skeleton is completed. (3) Amputation is therefore better suited to adults than extirpation, a stump generally furnishing a better point of support than the foot deprived of the calcaneum. (4) It is to be borne in mind, however, that amputation is a far more fatal operation than extirpation, and that under certain conditions this operation may be followed by a cure with far less peril to life. (5) When extirpation has to be determined on the greatest pains should be taken to ascertain that the calcaneum is alone diseased, and that the neighbouring parts and the tibio-tarsal articulation do not participate in the affection. But when this diagnosis is difficult and uncertain, the operation need not be necessarily abandoned. An exploratory incision may be made down to the bone in such a manner that it may afterwards serve, according to the extent of the disease, either for the removal of the calcaneum, for tibio-tarsal disarticulation, or an amputation of the leg. (6) In comminuted fracture of the calcaneum from gunshot wound or other cause, with a penetrating wound of the integuments, extirpation will probably be necessary, as the osteitis will generally go on to caries.

(7) Central caries, which has not yet attained the articular surfaces of the calcaneum, indicates the operation of complete gouging. Peripheric caries, with suppuration of the articular surfaces, requires the disarticulation of the bone and the scraping or cauterization of the corresponding articular surfaces. But if the caries has penetrated deeply into the astragalus and other bones, amputation should at once be performed. (8) Complete necrosis and diffuse phlegmonous periostitis are the affections in which extirpation best succeeds, as the periosteum being detached by the suppuration, the operation is reduced to the simple removal of a sequestrum. These are the cases too in which the best bony reproductions are met with. (9) The morbid conditions which indicate extirpation of the calcaneum are especially enchondroma and fibroma, hardly ever cancer. At its commencement cancer does not form a tumour which is sufficiently appreciable for diagnosis, and at a later stage it has invaded the surrounding tissues, and then no other operation but amputation of the entire foot is prudent. (10) The presence of fistulous openings and small ulcers, and inflammatory induration of the skin of the heel, form no contraindications to extirpation. But ulceration of the skin over a large extent, its invasion by a cancerous tumour, or even its excessive thinning through the development of a non-malignant tumour, are positive contraindications to the operation. Even supposing healing to take place, walking would have always to be performed on a cicatrized surface, and would give rise to various accidents. (11) In all cases advantage results from not delaying the operation for too long. (12) The traumatism resulting from it is inconsiderable, allowing it to be performed on subjects even when exhausted by disease.

Art. 221.—*Case of Aneurism of the Profunda Femoris cured by Compression in Twenty-four Hours.*

By John Erichsen, F.R.C.S.

(*British Medical Journal*, April 2.)

The following is an abstract of Mr. Erichsen's lecture delivered at University College Hospital on March 21st.

"There is a case of considerable interest now in the Hospital, of which I shall say more on a future occasion, but wish now to draw your attention to some of its more characteristic features. It is that of a large aneurismal tumour at the upper part of the right thigh. The history is obscure. Last Christmas the patient had an attack of pneumonia, on which a period of bad health supervened, and soon this swelling in the thigh made its appearance. On admission, we found a large tumour in the above mentioned situation; there was no thrill, no pulsation, in it. The superficial femoral artery crossed it on its inner aspect; and the pulsation in this, and in its branches below the tumour—viz., popliteal and tibial, was quite normal. In consequence of the stretching and compression of the femoral vein, there was some œdema of the lower part of the leg. I had then some doubts as to its nature. It might have been, first, an aneurism undergoing consolidation; secondly, a deep

abscess beneath the periosteum; thirdly, a tumour springing from bone. At the next visit I found the tumour increased in size considerably; it was pulsating strongly, the pulsation being heaving rather than expansile. There were a distinct thrill at the inner part and a bruit, both synchronous with the entrance of blood into the common femoral, and arrested by compression of the same. The muscles of the anterior part of the thigh were stretched and separated. As to its nature, the first idea was that the tumour was an aneurism, but scarcely of the superficial femoral artery, for this was pulsating over the tumour for its whole length, and even below it, and the pulsation in the popliteal artery was quite free. Now aneurism of the superficial femoral springs from the fore part of the artery. In my experience I never knew a case where it sprang from behind. This idea was therefore set aside. Secondly, the idea that it was a pulsating tumour of bone springing from the anterior and inner aspect of the femur, was favoured by (*a*) the strong pulsation without great expansion; (*b*) the distinct thrill; (*c*) the harsh bruit so commonly heard in aneurism by anastomosis consisting in a congeries of smaller vessels. Thirdly, aneurism of the profunda femoris is probably the correct solution of the case. This is a very rare disease, there being few cases recorded. In my own experience I have met with but one instance. A man was under the care of one of the physicians in this Hospital for pneumonia: he complained of some swelling and uneasiness in the thigh, but such was the gravity of his internal complaint that no heed was paid to this. He died. At the post-mortem examination a large circumscribed false aneurism of the profunda artery of the thigh (of the size of a cocoa-nut) was discovered. I was disposed then to consider this an aneurism of the profunda artery, because the aneurism was unquestionably in the situation of this artery, being between the superficial femoral artery and the bone. That the latter vessel was quite free, is proved by the fact that the pulsation, through it and its terminal branches, was quite normal in character. Again, pressure on the common femoral arrested the pulsation, the bruit, the thrill, and even the size of the tumour, so there could only be one other vessel than the superficial femoral to supply it—viz., the profunda.

"*The Influence of Treatment.*—Pressure on the common femoral artery arresting the signs, Carte's compressor was applied. The patient bore this badly; he was irritable, and writhed from under the compressor. In the evening, forty grains of hydrate of chloral were given. With this he slept heavily and deeply for twelve hours, during which time the compressor was kept in firm application. In the morning, the pulsation and thrill were found much diminished, the bruit less marked, and there was decided consolidation in the tumour. He could no longer bear this instrument; but, for the next twelve hours, digital compression was used and arrested all the signs. For safety, pressure on the artery was maintained for some hours afterwards; but the twenty-four hours' compression did the work entirely. This would lead us to infer that the tumour was a real aneurism not connected with bone. The thigh has decreased in circumference an inch and a half. All the aneurismal signs are removed, which could only happen in the case of a real aneurism. I am inclined to the opinion that the tumour was consolidating on

admission, but that the manipulation used in the examination and diagnosing of it set the aneurism going again—and that then compression succeeded in curing it.

"Reference to the anatomy of the profunda makes it easy to see that compression should cure aneurismal disease of it. Being destined chiefly for the nutrition of the thigh, it has a short trunk, and speedily breaks up into minor branches: hence there is not a long trunk going through the aneurism, and the blood has not to traverse the sac from the vessel by which it enters to one large vessel of exit, but to filter through a number of smaller vessels; consequently the coagulation of the blood is very much favoured. We cannot prophesy as to the future and the complications of the case: the tumour may undergo disorganization and suppuration; if not, it will probably advance by steady progress to recovery."

Art. 222.—*A Case of Popliteal Aneurism Treated by Digital Compression; Cured in Sixteen Hours.*

Under the care of Mr. B. Holt, at the Westminster Hospital.

(*The Lancet*, April 2.)

The following case, for the notes of which we have to thank Mr. M'Cann, house-surgeon, is interesting on account of the short time in which a cure was effected, as well as the freedom from pain during its treatment:—

John G——, aged forty-one, was admitted on Feb. 10th, 1870, suffering from popliteal aneurism. He was a private in the 90th Foot for twenty-two years, during which time he was subjected to hard work, lifting heavy baggage when changing barracks, and carrying it up and downstairs to the waggons. He left the army in 1869, and followed the calling of a tailor, when he was in the habit of easing his left leg by placing the right foot under it, finding it gave him pain to sit cross-legged.

About five months ago he experienced cramps in the left leg whilst in bed; the pain was so great that he was obliged to get up and walk about the room. The cramp and pain then ceased, and he felt quite well for a fortnight or three weeks, when the pain returned, extending to leg and thigh. At this time he noticed a small lump in the left ham about the size of a marble, which gradually and steadily increased to that of a hen's egg.

In Feb. 1870, the pain became so severe that he took to his bed; the leg could not be extended, and his walking was much interfered with. He then sought relief. He was a moderately well-nourished man; heart sounds healthy at apex, but at the base the first sound was much masked by the second, and appeared faint. Pulse 90, irritable. An aneurism existed in the left ham the size of a hen's egg, pulsating expansively with the heart's systole. Pressure on the left femoral in Scarpa's triangle annulled pulsation and bruit. The tumour necessitated the flexion of the leg on the thigh at an angle of thirty degrees. The anterior and posterior tibials beat feebly as compared with the same

vessels on the opposite side. The actual dimensions of the aneurism may be represented as $2\frac{1}{8}$ by $1\frac{1}{4}$ inches.

Mr. Barnard Holt gave directions as to the treatment of the aneurism by digital compression. Accordingly a relay of assistants, students at the hospital, having been secured, treatment was commenced on Feb. 15th, at 11 A.M., and kept up till 12 noon on the 16th; but although thus continued all pulsation had ceased at 3 A.M., sixteen hours from the time this treatment was adopted. As a proof of the painless nature of the proceeding, it may be mentioned that the patient slept on one or two occasions for a considerable time while the pressure was being made. Pressure with the thumb was made on the left femoral as it passes over the os pubis. Six students took part in the duty by turns, the place of pressure not being varied, and the time occupied by each being at first half an hour and subsequently a quarter of an hour, as it was found that equable pressure could not be kept up for a longer time. The temperature of the limb sank about two degrees, but regained the same as its fellow on the second day.

Up to the date of our report (Feb. 28th) the patient has remained quietly in bed, the aneurismal clot contracting and hardening; no pulsation to be felt in either the anterior or posterior tibials (left), but the left anastomotica magna is larger than that of the right.

ART. 223.—*A Case of Popliteal Aneurism.*

Under the care of Mr. G. E. LEGGE PEARSE, at the Westminster Hospital.

(*The Lancet*, April 2.)

The following is another example of popliteal aneurism cured by pressure, but in this case by means of tourniquets. The patient presented himself for examination at the hospital in November last, when it was found that the tumour had entirely disappeared, and very slight stiffness of the knee was all that remained. We are indebted to Mr. Lloyd, house-surgeon, for the notes:—

Hugh C——, aged twenty-three, was admitted on the 29th May, 1869, suffering from a popliteal aneurism of the size of a small orange, occupying the middle of the right ham. All the signs of an aneurism were well marked; pulsation and expansion were very evident throughout the sac. On compressing the femoral artery the tumour became soft and flaccid, and could be very nearly emptied, all pulsation ceasing and a distinct systolic bruit, which was previously heard, being discontinued. There was very little pain or tenderness in the tumour, but considerable uneasiness and stiffness in the whole of the affected limb. The man first came among the out-patients, being quite ignorant of the gravity of his ailment, and stated that three weeks before his admission, whilst running, he was seized with severe pain in the calf. He took no notice of it at the time, but feeling the leg stiff some days after was led to examine it, and noticed a small swelling, which had gradually in-

creased up to the time of his applying for relief. The patient was a vagrant, who attended race-courses in all parts of the country and obtained his livelihood as a courier, frequently running many miles across country, leaping hedges and ditches. He was pale and of spare habit, had never suffered from illness, but had always led a very irregular and dissipated life.

May 31st.—A Signorini's tourniquet was applied to the femoral artery over the pubes, and a ring tourniquet over Hunter's canal. Each was alternately screwed sufficiently tight to arrest the flow of blood at first for about half an hour at a time. A flannel bandage was applied to the leg to prevent swelling, and hot bottles to the foot, as the patient complained of cold during the compression of the artery. He was allowed full diet with one pint of porter.

Third day.—The patient complains of severe pain in the thigh and leg, probably caused by the pressure on the branches of the anterior crural nerve; and this increased so much that at midnight both tourniquets were obliged to be removed, and could not be reapplied until 2 P.M. on the following day.

Fifth day.—The pulsation has perceptibly diminished, and expansive pulsation has quite disappeared. The patient does not complain of pain, takes his food with a good appetite, and bears the pressure remarkably well.

Sixth day.—Both tourniquets being removed, very little pulsation can be felt. There is still a slight systolic bruit. Tourniquets reapplied.

Seventh day.—The pulsation is now hardly perceptible; no bruit whatever can be heard; the tumour is much diminished in size, and is becoming harder. In the evening the patient feeling the continued pressure irksome, took off both tourniquets without telling the nurse. This was not discovered until the middle of the next day, when the pulsation was found to have increased, and the tourniquets were at once reapplied.

Eleventh day.—There is now no trace of pulsation. The tumour still decreasing in size, has become perfectly hard and incompressible. A small vessel can be felt pulsating on the inner side of the tumour. There is now no pulsation to be felt in the posterior tibial artery at the inner ankle; and Mr. Pearse, considering therefore that the vessel was completely occluded and the tumour solidified, ordered the tourniquets to be removed. A ham-splint was then applied, and the patient was allowed to go about the ward. The temperature taken between the toes of the affected side was 84°·8; of the sound limb, 88°. No medicine was ordered for the patient during his stay in hospital. He was discharged thirty-seven days from the time of commencement of the treatment, being able to walk very well with slight stiffness, complaining neither of pain nor inconvenience. One or two collateral branches could be felt distinctly, and a slight thickening in the ham was all that remained of the tumour.

Art. 224.—*On the Reproduction and Reunion of Divided Tendons.*

By M. Demarquay.

(*Communicated to the Académie des Sciences.*)

From the researches of M. Demarquay it results that neither the blood, nor the plastic lymph, nor the blastema, which have been in succession invoked as elements of reparation, play the part that has been attributed to them.

From these researches the following conclusions have been derived:—

1. That the tendon is regenerated by the proliferation of the elements which are found on the internal surface of the sheath of the divided tendon, the two ends of which are retracted.

2. That the external portion of the sheath remains perfectly indifferent during this phenomenon, except it be that the vessels which it supports become more voluminous and increase in number.

3. That the proliferation which takes place on the internal surface of the sheath takes place at the expense of the cellular elements of this part, which at the end of the eighth or tenth day become confounded with the cellular elements springing from the extremity of the divided tendon.

4. That the regeneration of the tendon is so much the more rapid as the sheath of the divided tendon is more vascular; in fact, whilst the tendo Achillis is repaired by the twentieth or twenty-fifth day, the ligamentum patellæ requires a more considerable time.

5. That the phenomenon which constitutes the reproduction of tendon is, in all points, conformable to that which takes place in the reproduction of bone from periosteum, a phenomenon which has been well studied by MM. Flourens, Ollier, and Sédillot.

Art. 225.—*On the Treatment of Rupture of the Ligamentum Patellæ.*

By Dr. Sistach.

(*Gazette Hebdomadaire*, No. 7, 1870.)

The following is the substance of a report by M. Demarquay to the Académie de Médecine on Dr. Sistach's memoir on rupture of the ligamentum patellæ and its treatment:—

The causes of rupture of the ligamentum patellæ are the same as those inducing fracture of the patella by muscular action. The symptomology of the lesion is simple, especially when the rupture is complete. Thus the practical interest attending the lesion consists entirely in the mode of treatment suitable for application to it in order to prevent bad results.

M. Demarquay gives a resumé of two cases upon which Dr. Sistach had based his researches.

The first case was one of a man, aged forty-nine years, who underwent treatment for rupture of the right ligamentum patellæ with tearing away of an osseous layer of the tibia, the injury having been caused by a violent strain. The wounded limb was for seventeen hours placed on an inclined plane, and treated by resolvents. After this, a vain attempt was made to employ the instrument of Baudens, devised for the treatment of fracture of the patella, but this the patient could not support. On the twenty-ninth day a dextrine bandage was applied, but this also could not be tolerated by the patient. On the sixty-sixth day the man could use crutches. At the end of the fourth month he could walk, and at that time was commencing to flex the leg.

The second case related to a man, thirty-six years of age, who had suffered rupture of the left ligamentum patellæ in consequence of a fall. From February 6th to May 9th the injured limb was placed on an inclined plane. On July 8th, six months after the accident, the patient could walk with the aid of a cane.

M. Demarquay insists upon the great importance of removing in the first place the primary symptoms, such as articular and arthritic effusion, before having recourse to any apparatus, with the aim to bringing back the patellar ligament to its tibial insertion. It is necessary to place the limb upon an inclined plane, as was long ago recommended by Pott, Dupuytren, Malgaigne, and others, and as followed out by Dr. Sistach. Then the articular inflammation ought to be treated. M. Demarquay does not agree with Sistach in the absolute rejection of all confining apparatuses. He is of opinion that an apparatus of this nature may be employed with advantage, on the condition that it is well tolerated by the patient, and perfectly fulfils its end; that is to say, that it causes the patella to descend, and serves to bring down the divided ligament to the point at which it ought to become united. It ought especially to be employed when it is likely to exert any resolvent action upon the concomitant arthritis. As soon as it becomes possible, M. Demarquay attempts to apply to the affected limb gentle pressure, with a dextrine or silicated bandage, after having previously enveloped the joint in wool for the purpose of avoiding painful pressure, and of preventing depression of the lacerated tendon.

For how long is it necessary to leave the patient at rest with or without an apparatus, and when ought the joint to be moved? Dr. Sistach, agreeing on this point with M. Demarquay, thinks that it is impossible to answer this double question in a general manner, and that the surgeon ought always to be guided by the particular case under his eyes.

With regard to the mode of cure, M. Demarquay having his views upon experiments recently made by him on dogs, concludes that the ligamentum patellæ is reproduced with a constant elongation; whence it results that the treatment should be applied in order to render this increase of length as small as possible.

Dr. Sistach rationally assimilating ruptures of the ligamentum patellæ to fractures of the bone, hopes to prevent the bad results of the former

injuries by using only the inclined plane. But the two cases reported by Dr. Sistach prove the insufficiency of this simple apparatus, and the necessity of having recourse to a retaining apparatus as soon as its application can be tolerated by the affected joint.

M. Demarquay, in conclusion, insists upon the frequency of rupture of the ligamentum patellæ, and is convinced that this lesion is often confounded with traumatic arthritis.

Art. 226.—*On Disease of the Knee-Joint.*

By Thomas Bryant, F.R.C.S., Assistant Surgeon to Guy's Hospital.

(*Medical Press and Circular*, December 29, 1869.)

At a meeting of the Medical Society of London, held December 13th, 1869, Mr. Bryant read a paper on the treatment of disease of the knee-joint, more particularly in reference to operative interference. He began by stating as a rule, no operative interference was necessary in inflammatory disease of the knee-joint without disorganization. When suppuration has taken place of diseased synovial tissue a cure by natural processes assisted by art is generally to be secured. When the disease begins in the bone, operative measures are demanded. A cure by anchylosis is by no means uncommon in the former case. During the acute stage, danger to life is great; the question arises then, whether to amputate or no in order to save life; as a rule, amputation or excision for acute suppurative disease generally is fatal. Mr. Bryant preferred making free incisions into the joint, and washing out with warm water, he considers this ought to precede other operations. Mr. Bryant then read three cases of diseased bone in the knee-joint, resulting from articular ostitis, in which he had removed the sequestra; and the patient recovered with anchylosed joints, and one similar case in which amputation had to be performed. In disorganized joint, the question is, amputation or excision. In amputation of thigh for chronic disease of the knee-joint, taking patients of all ages from his own tables, Mr. Bryant found 188, from Dr. Cormack's 137, total, 325; of these 66 died, 259 recovered, mortality being 20 per cent., or 1 in 5. In Dr. Hodge's work Mr. Bryant found 178 cases of excision of the knee for chronic disease, 70 died, and 100 recovered, mortality 39 per cent., or 1 in $2\frac{1}{2}$. Mr. Swain has given the following up to 1865: 316 cases of excision had been performed, 85 died, or 27·2 per cent., 9 of these having died after amputation, which had been deemed necessary in 39 cases. Since 1865, 74 cases are given, 25 of which died, or 33·7 per cent.; 4 also died out of 11 that underwent amputation; 29 out of 74 dying, or 39 per cent. Mr. Swain gives also a select list of 82, 15 died, 4 others recovered after amputation. We thus have 472 cases of excision of knee-joint, and 129 deaths, or 27·3 per cent., 13 of these being after amputation. If, however, the results of both operations are considered at different periods of life (a point of immense importance), the following striking results come out: In amputations for chronic

disease of knee-joint in patients under 20 years of age, out of 69 cases 3 only died, being 4·3 per cent., or 1 in 23. In excisions for similar cases and same age, out of 97 cases 27 died, or 27·8 per cent., or 1 in 3 2-3. In amputations between 21 and 40, out of 119 cases, 3·38 died, or 32 per cent., or 1 in 3. In excisions, out of 74 cases, 39 died, or 52·7 per cent., or more than 1 in 2, the difference being 20 per cent. against excision. Admitting excision to be a good operation, do the advantages justify the extra risk? Mr. Bryant thought not; he also considered an early operation the most successful, it should not be performed when an operation is demanded to save life, only when local disease is steadily progressing in spite of treatment. In conclusion, Mr. Bryant hoped the advocates of excision would recognise the results of experience, and not shut their eyes to those cases that tell against the operation, the point to be settled being the period of the disease in which excision should be undertaken as an operation of expediency. Mr. Bryant is inclined to think that excision may not only be a justifiable, but successful operation.

Art. 227.—*On Resection of the Knee.*

By M. Pénières.

(*Thèse de Paris*, 1869; and *Archives Générales de Médecine*, Mai, 1870.)

M. Pénières in his inaugural work offers an excellent study of the subject of resection of the knee. He insists, with Butcher and Price, upon the advantages attending excision of the patella: this proceeding shortens the duration of the treatment, is useful with regard to the future utility of the limb, and also diminishes the mortality of the operation and reduces the chances of consecutive amputation.

In considering the cases in which resection of the patella has been practised, the author remarks that the preservation of this bone doubles the risks of secondary amputation, whilst its excision diminishes by almost one-third the risks of mortality.

After remarks upon the indications for the operation and the methods of performing it, M. Pénières gives the results of 431 cases of resection for acute swelling: 300 patients recovered, 131 died, these numbers including the cases of amputation and re-excision. These tables give a mortality of 30·3 per cent. The recent statistics of M. Lefort give with regard to mortality 29·7 per cent., and those of M. Lyon 28·6 per cent.

The mortality, which before the year 1852 had oscillated between 52 and 54 per cent., has since been always maintained at some point below 30 per cent., thanks to the perfecting of the proceeding, and especially to the more minute attention paid to patients before operating.

In these observations the sex is specified in 380 cases; out of 245 men operated upon 59 died (24·2 per cent.); with 135 women there were 50 deaths (37 per cent.). With the male sex then the mortality will be 13 per cent. lower than that in the opposite sex.

With regard to age the results were as follows:—

	Number.	*Successes.*	*Failures.*	*Proportion.*
From 1 to 5 years	18	11	7	38·8 per cent.
From 5 to 10 „	84	70	14	15·4 „
From 10 to 15 „	74	60	14	18·9 „
From 15 to 20 „	61	41	20	32·0 „
From 20 to 25 „	56	36	20	35·7 „
From 25 to 30 „	51	39	19	37·2 „
From 30 to 40 „	42	23	19	45·2 „
Above 40 „	17	9	8	47·0 „

In France resection has been performed 32 times with 14 recoveries and 18 deaths.

The causes of death were indicated in 89 instances: 32 patients died from pyæmia, 12 from phthisis, 17 from exhaustion, 13 from hæmorrhage, 3 from meningitis; of the remainder 1 was carried off by osteomyelitis; 1 by the shock of the operation, or rather by visceral complications, as pneumonia and albuminuria.

The period of death is specified in 69 instances. Forty-four patients died in the first month, and of these, eleven in the first week either by hæmorrhage or by acute accidents. The majority of the patients attacked by pyæmia died within the first fifteen days, the others mostly within one month; two only at a later date, at the sixth week and at the second month. Fourteen patients died between the second and fourth month from exhaustion. Beyond this last period ten other patients died from relapse of the disease.

The author then establishes by his tables the superiority of resection over amputation. The statistics give as the mortality of amputations of the thigh practised for chronic affections of the knee proportions varying from 32 to 62 per cent.

With regard to the results, statistics indicate that out of 431 resections there were 300 recoveries: 247 patients were cured without another operation, 47 by secondary amputation, 6 after re-excision. Out of these 247 cases the result was given as very good in 166 instances, as bad in 27. The mean duration of the treatment was from six to eight months.

Out of 61 patients upon whom consecutive amputation was performed 47 recovered and 14 died. This gives a mortality of 22 per cent.

Out of ten patients upon whom re-excision was performed 4 died.

In a second table M. Pénières collects all the cases of resection for anchylosis which he has been able to find in periodical publications. This table mounts to 32, and comprises only resections for pure and uncomplicated anchylosis. Death occurred in 4 instances, which gives a mortality of 12·5 per cent., a proportion that approaches very nearly to those of Heyfelder and Lyon.

According to the author, resection has been applied in two instances only for the removal of tumours from the knee. The operations were performed by Langenbeck and Gayet of Lyons, and were both fatal.

In the third part of his memoir, M. Pénières considers resection for injury of the knee; every one knows that it is especially with regard to

wounds that resection has met with its chief adversaries. Military practice gives 3 cures in 20 cases, whilst in civil practice, on the other hand, there were three deaths out of 7 cases of operation.

The author concludes his work by recommending in cases of white swelling the preference of resection to amputation for patients between the ages of five and thirty-five years, provided that there are no complications, that the lesions are strictly limited to the articular extremities of the bones, and that they have not lasted too long, and have resisted all other modes of treatment.

Resection applied to the treatment of gunshot wounds has given very good results in civil practice; it should be preferred to amputation in cases where there is a decided localization of the injuries to the knee and no complications.

In military surgery fresh experiences are required before one can pronounce definitely upon the value of resection in the application to wounds produced by firearms.

For penetrating wounds opening the knee-joint to a great extent, resection has on some occasions been employed with advantage.

Amputation should be preferred for the treatment of malignant tumours of the knee.

Partial resection ought to be rejected, except perhaps that of the patella.

Art. 228.—*Retro-Curvation of the Knee.*

By Louis Bauer, M.D.

(*St. Louis Medical and Surgical Journal*, November, 1869.)

Dr. Louis Bauer records a most interesting case of this very rare affection. The subject, a strong and healthy young man, aged twenty-four, had, when a boy, been stabbed in the knee with a knife. While in bed with this injury he contracted scarlatina, the consequence of the two being prolonged suppuration of the joint. Ultimately, however, he began to improve, when he left his bed and insisted on being allowed to get about on crutches. For seven years his condition was variable. Ultimately he got strong and well, but with a bent knee, for during his illness he had been accustomed to support his limb by a leathern strap stretched from his shoulders to the point of his toes. The constant action of this drew the toes towards the body, and this tendency was perhaps increased by an early recourse to the use of a cane instead of crutches. While the plastic material in and around the joint was still soft and pliable, the constant dragging upwards of the toes gave the limb a permanent set, and when afterwards he could put his foot to the ground, the set would be increased till the bone had hardened. When he came under observation the leg projected forward, so that both thighs being horizontal, as when seated in a chair with the feet raised, the affected foot rose in the air nearly at a right angle. No operation had been performed at the above date. Dr. Bauer proposed resection.

Art. 229.—*A Case of Compound Fracture of the Patella: with an Analysis of fifty-six Cases of that Injury.**

By A. Poland, F.R.C.S., Surgeon to Guy's Hospital.

(*British Medical Journal*, January 22.)

In presenting the case to the notice of the Society, the author drew attention to the following facts. 1. The peculiar and unusual nature of the accident; 2. The attempt to save the limb under circumstances most disadvantageous, owing to physical and moral defects; 3. The unfortunate relapse and threatening symptoms of pyæmia, after the primary danger of an inflamed and suppurating joint had passed over; 4. The chest-complication and exhaustion of the patient after subsidence of the pyæmic symptoms; 5. The saving of life by amputation of the limb.

G. M., aged twenty-eight, a boiler-maker, was admitted into Guy's Hospital on January 19th, 1869. About eight weeks previously, a transverse lacerated wound over the right knee was produced by a fall; for this he was treated as an out-patient at the Hospital. The wound was about three and a half inches in extent, and the patella was exposed, but the joint was not injured. Strapping and a back splint between the knees were applied. Cicatrization was almost completed, and he removed the splint and went about his employment. Early on the morning of his admission he caught his foot in a grating, and was thrown down on his side, in his fall using great muscular exertion to save himself. The newly cicatrized wound was torn open, and he suffered great pain. He was immediately brought to the Hospital. There was a large gaping wound in the site of the original injury, also a transverse fracture of the patella. There was hæmorrhage, and escape of synovial fluid from the joint. The dresser on duty introduced his finger into the joint. The wound was closed by sutures, a compress of lint with strapping applied and a back splint adjusted behind the knee. When he came under Mr. Poland's notice he was suffering from a chronic cough and general debility, which gave rise to the suspicion of phthisis, although no evidence could be elicited by the stethoscope. In three or four days inflammation and swelling of the joint ensued. The dressings and sutures were removed, and carbolic acid lotion was applied to the wound, which had a sanious discharge. On the tenth day suppuration had fully set in, and the discharge was profuse. This suddenly lessened, and symptoms of pyæmia became manifest; but suppurative action in and about the joint reappeared, necessitating the use of free incisions. During a lingering and tedious suppuration, with ulcerative action for a period of six weeks, the man's health began to give way. Amputation was performed on the 5th of March. The patient made a most rapid recovery and gained flesh, although he did not lose his cough entirely.

The author made some comments on the peculiar nature of the injury,

* Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society held January 11th.

and referred to other cases of compound fracture of the patella. The patient's extremely exhausted condition and general state of health negatived the performance of excision, and the more so as the integuments and soft parts above and below the joint were much implicated in the suppurative action. The author also adverted to the statistics of fifty-six cases of compound fracture of the patella without any complication of the neighbouring bones of the joint. Mr. Poland concluded by inquiring whether there could be a compound fracture on the patella without a wound or lesion of the knee-joint? He had made some experiments which led him to believe that there could.

Mr. Solly spoke of the treatment of fractured patella. He still adhered to the old plan of elevating the leg, so as to relax the rectus femoris muscle, and placing a splint behind.

Mr. Holmes doubted whether a compound fracture into the knee-joint was now held to be an absolute indication for amputation; such cases were, however, dangerous, and would very probably demand it. The paper would no doubt call attention to the feasibility of preserving the limb. He wished that more had been said about excision of the patella in compound fracture—an operation which he believed had been performed by Dr. Humphry, of Cambridge. He was very sceptical as to the possibility of a compound fracture of the patella occurring without the joint being opened. Resection ought to be avoided in compound fracture of the patella; the injury was almost always, after childhood, one which required amputation.

Mr. Brooke said, that the deficient supply of blood to the lower part of the patella must cause repair to be very slow. It often happened that when a patient was sent out six or eight weeks after fracture of the patella, the ligamentous matter forming the union became stretched. This was to be obviated by causing a splint to be worn behind the joint for some time.

Mr. Birkett had seen only one case of compound fracture of the patella in Guy's Hospital, under the care of the late Mr. Aston Key. A man fell from a wharf into a barge containing iron, striking the centre of the patella on a piece of iron. This was his only injury, and the case did well. That the joint was opened was proved by some gentlemen who introduced their fingers into it through the wound. There was scarcely any constitutional irritation. The treatment consisted of the application of many leeches, with rest and extension. The man afterwards worked long at the same wharf, having perfect power of motion in the limb. In a case under his own (Mr. Birkett's) care, a man had received a wound a little below the patella; the capsule became distended with blood, some of which could be squeezed out. This patient also did well; he therefore hesitated to decide on amputation, especially when the unfortunate results of secondary amputation were remembered. He thought elevation of the limb not essential in cases of ordinary fracture of the patella.

Mr. Moore said that a splint behind the limb was even more necessary when the patient was allowed to walk about than when he was confined to bed. The idea of producing relaxation of the rectus by elevating the limb was erroneous. His knowledge of compound fracture of the patella was very limited. He had seen a case in which a man fractured both

patellæ, and recovered. A second fracture of both bones was also followed by recovery. After a third fracture of one of the bones, suppuration and death followed.

Mr. W. Adams said, that the interest of fracture of the patella lay in the amount of injury done to the joint. Incised wounds of the knee-joint had done well, but with lacerated and contused wounds there must be danger. The choice between excision and amputation must depend on the amount of injury of the soft parts. If there were not much injury excision might be done.

Mr. Cooper Forster said that Mr. Poland was prevented from being present, having been called to a patient. He did not think that compound fracture of the patella could occur without laying open the knee-joint.

Art. 230.—*On Amputation at the Knee-Joint.**

By G. D. Pollock, F.R.C.S., Surgeon to St. George's Hospital.

(*Medical Times and Gazette*, December 25, 1869.)

The author commenced by drawing attention to the circumstance that amputation at the knee-joint had not been very favourably entertained until within the last thirty years, and that only very lately had it been much advocated. Having himself performed the operation in several cases with satisfactory results, he desired to bring his experience before the Society.

After referring to the practice of Mr. Syme and of Mr. Samuel Lane, the author proceeded to say that, in the consideration of amputation through the joint, two conditions must be borne in mind—first, if there be disease of the joint and ulceration of the cartilages after the leg is taken off, the articular surfaces of the condyles and patella should be removed; secondly, if no disease of the joint exist, but amputation be requisite on some other account, then the articular cartilage should be left intact.

The author related the particulars and results of eight cases in his own practice, and quoted communications received from other English surgeons. From various sources he had been able to collect 48 cases operated upon in England. These showed a gross result of 36 recoveries and 12 deaths. A collection of American cases showed 32 recoveries and 13 deaths, thus giving a total mortality of 26·88 per cent.

After some further account of American experience in the matter, the author proceeded to describe the improvement suggested by Mr. Carden, of Worcester, of making the flap of skin taken from the front of the leg. He himself approved of the suggestion. The anterior flap should be long enough and broad enough to cover the whole of the exposed end of the femur. It should be so broad at its base as to be

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* Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, Tuesday, December 14th.

at least two-thirds of the circumference of the joint, the posterior flap at its base forming the other third. The author lays stress upon the anterior flap being of sufficient length (at least five inches below the lowest point of the patella), and is inclined to leave the patella in the flap when the joint is healthy. When it is diseased, he recommends the removal of the articular surface alone. The comparison between the stump usually obtained after amputation through the thigh, and that obtained after amputation through the knee-joint, is very much in favour of the latter, which is never conical or retracted, and is superior in strength and fitness for locomotion, in comfort and freedom from pain, and in capability to bear weight and endure exertion. It is also more easy to adapt a good serviceable artificial leg to such a stump. In conclusion, the author thought the facts he had brought forward, although not enough to lead to positive conclusions, were enough to commend the operation to the favourable consideration of the Society.

Art. 231.—*Amputation at the Knee-Joint by Modified Lateral Flaps.*

By Stephen Smith, M.D., Surgeon to the Bellevue Hospital, New York.

(*American Journal of the Medical Sciences*, January.)

In several recent amputations at the knee-joint Dr. Smith has endeavoured to combine the good features of the long anterior flap and the lateral flaps, without their objectionable points. The operation is performed as follows:—The incision is commenced about one inch below the tubercle of the tibia, and carried downward and forward over the most prominent part of the side of the leg, until it reaches the under surface, when it is curved towards the median line. When that point is reached, it is continued directly upwards to the centre of the articulation. A second incision begins at the same point as the first, and pursues a similar direction upon the opposite side of the leg, and meets it in the median line on the posterior part. The following precautions should be remembered—viz., the incisions should incline moderately forwards down to the curve of the side of the leg, to secure ample covering for the condyles, and that upon the internal aspect should have additional fulness for the purpose of insuring sufficient flap for the internal condyle of the femur, which is longer and larger than the external. In the dissection, the skin, fascia, and cellular tissue are raised, and the ligamentum patellæ divided, allowing the patella to remain. The ligatures are all drawn out of the posterior angle of the flaps.

This method of amputation need not be limited to the knee. The advantages of drainage, and the removal of the cicatrix from the face of the stump to its posterior part, equally adapt it to amputation in the leg or thigh. Dr. Smith has frequently amputated at both of these points by this method, and obtained the most satisfactory results. The

wound heals with remarkable rapidity, and the final perfection of the stump leaves all that can be desired.

Art. 232.—*Fractures of the Femur.*

Under the care of Mr. T. W. Nunn, at the Middlesex Hospital.

(*The Lancet*, March 26.)

The difficulty encountered in satisfactorily deciding as to what is the precise nature of an injury to the upper segment of the femur is often very slight, but occasionally the reverse. When the age is between sixty and seventy years, or upwards, and the history of the accident is that the patient, a woman, let us say, has been knocked over by a rough lad in the street, or has stumbled, or has entangled her petticoats in some projecting object, and has fallen to the ground, losing the power to rise, and presenting eversion of the foot, with shortening of the limb, the surgeon does not hesitate to conclude that he will find confirmatory symptoms of fracture of the neck of the femur, nor to give a prognosis in accordance with the well-known usual consequences of that distressing accident. On the other hand, where there is deformity about the region of the trochanter, great tenderness, some shortening, perhaps a good deal of constitutional disturbance, a clear, definite diagnosis cannot be pronounced off-hand.

We lately saw the case of a pensioner, long since discharged from the cavalry. This man whilst in the Crimea, and serving in a dragoon regiment, had his horse fall upon him. He remained lame, and consequently was unfit to continue in the army. About three months since he had a fall whilst walking, and was admitted under Mr. Nunn's care. The region of the trochanters on the left side was so tender that the patient could not bear handling without flinching. There was some slight real shortening, and, besides, more apparent shortening from the position of the pelvis. There was no crepitus. It was therefore not easy to say what was due to recent injury, and what share the other accident had in the then existing state of matters. The patient, we have now to add, rapidly recovered his previous condition by simple and soothing remedies, no splint being employed.

At the present date there is a male patient in the Clayton ward, also a pensioner (from the Guards). He is seventy-two years of age. There is obviously mischief, from a fall, about the upper portion of the right femur; but he is the subject of a most extreme form of gouty deposit in the sheaths of tendons, and in the bursa, so that a source of obscurity again comes in the way. There is considerable swelling over the front and outer side of the thigh-joint, below the anterior superior spinous process of the ilium. As is commonly the case in fractures in old people with specially damaged constitutions, grave indications of failing power, in the shape of a dry, brown tongue, and proneness to bed-sores, are showing themselves, and a favourable result is hardly to be anticipated.

Mr. Nunn pointed out to us these cases as interesting subjects of speculation. He, however, dwelt longer over the beds of patients with simple fracture of the femur. One was the case of a policeman who had been run over by a waggon, and had fracture at the middle of the shaft by direct violence; another, that of a painter, who had fallen from an inconsiderable height, and had simple fracture, also of the middle third, by indirect violence. In both of these cases the ordinary long splint was used. Mr. Nunn said that it was impossible to be too watchful in the treatment of cases of fracture of the lower extremity, especially of the shaft of the femur; for it was alleged by some surgical writers that shortening always was to be detected after the patient was supposed to be cured. When it is remembered that, with a fracture of the thigh, the patient must look forward to eight weeks, more or less, in bed, the very duration of the treatment is a reason for care, as without carefulness the attention of the surgeon is, during the lapse of such a period, sure to be attracted to fresher and more obtrusive cases. It is during the third and two following weeks of splint-wearing that Mr. Nunn insists on the most vigilant watch being kept over the extension, and upon the tape measure being constantly employed.

PART III.—MIDWIFERY.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 233.—*The Induction of Premature Delivery as a Prophylactic Resource in Midwifery.*

By T. GAILLARD THOMAS, M.D., Professor of Obstetrics and the Diseases of Women and Children, in the College of Physicians and Surgeons, New York.

(*New York Medical Journal*, February.)

The author's impression is, that nothing will in the future tend to diminish the mortality attendant upon parturition so markedly as the induction of premature delivery for the removal of mother, child, or both, from that condition upon the continuance of which depends the danger which menaces them.

In this essay Dr. Thomas makes a marked distinction between premature labour and abortion. The former denotes a premature expulsion of the contents of the uterus; the latter, a failure in the results of utero-gestation. Consequently, the induction of premature labour is in one essential respect different from that of abortion, and is called for in the fulfilment of different indications. The former, being resorted to after the period of viability of the child, does not involve the sacrifice of its life, but often adds to its prospect of living by removal of it from a position of danger, and sometimes even of certain death; or, to put the matter more tersely, abortion is resorted to in the interest of the mother alone at the expense of the life of the child: premature labour is induced sometimes for the sake of the mother, sometimes for that of the child, and sometimes in the interest of both.

The following list presents the morbid states for which Dr. Thomas considers the operation indicated:

1. Deformity of the pelvis.
2. Placenta prævia.
3. Aggravated uræmia.
4. Excessive vomiting.
5. Placental apnœa.
6. Commencing epithelioma.
7. Death of child and consequent septicæmia.
8. Threatened death of child.
9. Approaching death of mother.
10. Amniotic dropsy.

11. Previous rupture of uterus or performance of Cæsarian section.
12. Excessive accidental hæmorrhage.
13. Previous difficulty in deliveries of large children, or of children with ossified sutures.
14. Tumours obstructing the pelvis.

From this enumeration of indications for the induction of premature delivery, Dr. Thomas has intentionally excluded a number which call for abortion, but not for the procedure which now engages attention. He has likewise, for the purpose of avoiding prolixity and a spurious show of completeness, omitted the enumeration of certain rare conditions which might call for it, but would in all probability never do so. As examples of such indications to the author he mentions the existence of ovarian and fibroid or fibro-cystic tumours in the abdomen; the differentiation of an extra-uterine pregnancy from a tumour, &c. The ground left untouched in the list given may be covered by two general statements: first, any condition threatening the life of mother or child after the period of viability, which could be removed by premature delivery, would call for its induction; second, any obstruction existing in the true pelvis which would allow the passage of a child that has not arrived at the full period of intra-uterine life, and would prevent the exit of one which has reached the end of the ninth month, without mutilation, would prove a valid indication.

Deformity of the Pelvis.—It is difficult to say what degree of deformity calls for the procedure, but in general terms it may be stated that, wherever it is estimated, or, as is far better, where it is proved, that a child at full term cannot be delivered except by instrumental or manual means, premature delivery is called for. Still speaking generally, the normal length of the shortest diameter of the pelvis is 4 inches; between this and 3 inches is the domain of the forceps; between 3 inches and $2\frac{1}{2}$, that of version; between $2\frac{1}{2}$ and 2, that of craniotomy; and under 2 inches, that of the Cæsarian section. Dr. Thomas does not argue as to the propriety of preferring premature delivery to the terrible risks attendant upon the graver of these procedures, for all will admit it. He takes a position which will be less freely acknowledged when he states that so safe is the premature and artificial delivery of a child at the eighth or eighth and a half month of utero-gestation, by our present methods, that it should be preferred to delivery by the forceps at the tenth menstrual epoch. But under the last circumstances the necessity for interference must be established, not by measurements, which do not display slight contraction; it must have been proved by past experience with the particular patient whose case engages attention.

For such a condition as that which Dr. Thomas has depicted he has twice induced premature delivery. One of these cases will suffice as illustrative of his proposition:

I was requested in the month of March last, by Dr. Wm. B. Bibbins, to see with him Mrs. McD., an Irishwoman, aged thirty-six years, who had been married seven years and borne four children. She gave the following history of her labours. The first child, a small girl, was delivered at full term by the forceps, by Dr. Ramsey. She was in labour, she says, four days. This child lived for one year. The second child was a larger girl, which was delivered by forceps, and was still-born. The third was deli-

vered by version, by Dr. Gillette, and was still-born. The fourth was delivered by myself in consultation with Dr. Bibbins, by version, and was still-born. She was now pregnant for the fifth time, and was extremely solicitous for a living child. With Dr. Bibbins's consent, I promised her that delivery should be brought on in three weeks from date, when she would be at the end of the eighth month of pregnancy. A careful examination of the pelvis convinced me that it was a *justo minor* pelvis, but one not relatively deformed.

On the appointed day Dr. Bibbins, Mr. Hall, a student of Dr. B., and myself, met at the house of the patient, and proceeded to bring on delivery in the following manner: we placed the patient in the obstetric position, with a tub of warm water under the edge of the bed, and for half an hour showered the os freely. At the end of that time I put in Barnes's smallest dilator, and in an hour the os was fully dilated, and the bag of membranes presenting; no labour pains came on, and in twenty-four hours we met again, and I used the warm douche for a half hour, dilated the os fully with the largest dilator, and introduced a No. 6 gum-elastic catheter between the membranes and the uterus, up to the fundus. In twenty-four hours we met again, and to my surprise, found that no uterine contraction had occurred. The catheter was now removed and inserted upon the other side, an enema of salt water was thrown into the rectum, and the largest dilator again introduced. We waited over an hour, and still there was no uterine effort. Slight hæmorrhage from the uterus now occurred upon removal of the dilator, and fearing for the child I proposed at once to deliver it. Dr. Bibbins consenting, the patient was anæsthetized, and, passing the hand into the vagina, and two fingers into the uterus, I readily delivered a vigorous boy, who has since done well, as has also his mother. I have met with but one other case—one, by the way, which was coincident as to time with this one, in which it was so difficult to excite uterine contractions.

Placenta Prævia.—Dr. Thomas's conviction is that, in every case of declared placenta prævia, premature delivery should be induced. What objections can be urged against it, other than that a child of less than nine months of intra-uterine life does not have as good a prospect of life as one which has arrived at full term? In the case which we are considering, even this falls to the ground, for an eight-months child out of the uterus, and depending upon pulmonary respiration, has a brighter prospect for life than one in that cavity depending for aëration of its blood upon a crippled and bleeding placenta. For the mother, how incomparably greater the safety which attends an emptied and contracted uterus! By inducing delivery during the ninth month of pregnancy, we should be dealing with a woman who is not exhausted by repeated hæmorrhages; we would be in attendance at the moment of cervical dilatation, and consequently the moment of danger; and we would be able by hydrostatic pressure to control hæmorrhage in great degree, while at the same time dilatation of the cervix, which constitutes the period of maximum danger, may be rapidly accomplished.

Dr. Thomas has induced premature delivery for placenta prævia four times, and, as the subject appears to him of paramount importance, he gives details of all the cases:

Case 1.—Mrs. W., aged twenty-six, primipara, in good health, was suddenly taken with hæmorrhage three weeks before full term. She sent for me in great haste, but being occupied, I was unable to go to her, and she was seen for me by my friend Dr. Reynolds. He discovered that she

had lost a few ounces of blood, but that the flow had ceased. Three days afterward she was again affected in the same way, the flow ceasing spontaneously. About a week after this, she was taken during the night with a flow, which was so profuse as to result in partial syncope when she endeavoured to walk across the room. I saw her early the next morning, found her flowing slightly, and, upon vaginal examination, succeeded in touching the edge of the placenta through the os, which was dilated to the size of a ten-cent piece. Later in the day, Drs. Metcalfe and Reynolds saw her and agreed in the propriety of premature delivery. In accordance with this consultation, at 7 P.M. I introduced into the cervix, with considerable difficulty, and by the employment of some force, the smallest of Barnes's dilators. This in twenty minutes was followed by the next larger dilator, and in an hour by the largest. Dilatation was rapidly accomplished, but, instead of removing the largest bag, I left it in the cervix until 10 o'clock that night. Expulsive pains coming on at that time, I removed it, when the head rapidly engaged, and before morning Mrs. W. was safely delivered of a living girl. The placenta followed rapidly, and both mother and child did well.

In this case, although hæmorrhage continued slightly throughout the labour, it was never sufficiently profuse to endanger the lives of either mother or child. The implantation of the placenta being lateral, diminution of the flow occurred as the head advanced, and made firm pressure against the bleeding surface.

CASE 2.—Mrs. D., a lady over forty years of age, whose last pregnancy had been completed fourteen years previously, was placed under my care by Dr. Metcalfe. She was an excessively nervous and hysterical woman, but in good health. About three weeks before full term she was taken with hæmorrhages, which lasted for very short periods, recurred at intervals of four or five days, came on without assignable cause, and ceased without remedies. The cervix was not dilated, and no physical signs of placenta prævia could be detected either by vaginal touch or auscultation. Dr. Metcalfe saw her in consultation, and, as all the rational signs of placenta prævia were present, and our patient was suffering from the repeated losses, and was becoming extremely nervous and apprehensive, we concluded to bring on premature delivery. Accordingly, at 11 A.M. I introduced a large sponge-tent into the cervix, and at 3 or 4 P.M. removed it, and succeeded in inserting Barnes's smallest dilator. At 9 that night the cervix was fully dilated at the expense of very slight hæmorrhage, and Dr. Metcalfe then being present, I removed the bag, intending to leave the case to nature, provided no flow occurred. Previously, during the evening, upon changing the bags, I had distinctly touched the head as the presenting part, but now, to my surprise, I found that the bag impinging on this part had caused the child to revolve in the liquor amnii, and that the breech was now within the os.

We decided under these circumstances to deliver at once. The patient being put under the influence of ether, I drew down the legs and delivered a living female child. The placenta followed in fifteen minutes, and both patients did well, the child rapidly recovering from an injury to one of its legs, received during delivery.

In this case the placenta was very nearly centrally attached. At one side of the os internum, a space of only two fingers' breadth was free. Through this, digital examinations were made, and the hand pushed to seize the feet. The first stage being accomplished by means of the

hydrostatic dilators, no hæmorrhage attended it; but, without this means having been employed, it is highly probable that profuse and dangerous flooding would have occurred.

Case 3.—Mrs. P., a multipara, aged thirty-eight, had advanced, without any unfavourable symptoms, to the middle of the ninth month of pregnancy. At this period, while sitting, at 9 P.M., in her parlour, engaged in some light needlework and in conversation, she suddenly felt a free flow of blood pouring away from the vagina. In a few moments she became very much exhausted, and was lifted up by her husband and carried upstairs to bed. I saw her within an hour after this, and found her still losing blood to a slight extent. Her pulse was very rapid and weak, and her face extremely pallid. It was estimated that about one quart of blood had passed, though this was of course uncertain.

As the flow had ceased after I had kept the patient quiet for an hour, I left the house, promising an early visit in the morning. Upon this visit I found her doing well, though somewhat exhausted. Feeling satisfied, from the great amount of flow, and the fact of its having occurred without any exciting cause, that placenta prævia existed, I now explained the state of affairs to my patient's husband, and requested Dr. Metcalfe to see her in consultation. He agreed with me that the probability of the safety of both mother and child would be greatly increased by at once inducing premature delivery, and at 9 that night I set about accomplishing it. At 9.30 exactly, in the presence of Dr. Metcalfe, I introduced into the cervix the smallest size of Barnes's dilators, and at 10.30 the os was fully dilated. So long as the bag was retained in the cervix, no hæmorrhage occurred, but on the instant of its removal a flow took place. Under these circumstances, it was thought best to deliver at once. The patient being put under the influence of chloroform, I performed bimanual version, and with great ease delivered a living child. The placenta soon followed, and mother and child recovered without an unfavourable symptom.

In this case, delivery was accomplished in one and a half hours from the commencement of the effort, and the process was inaugurated just twenty-four hours after the development of the first symptom of danger. The flow which constituted this symptom was so sudden and alarming that it was thought that great danger would attend delay, uncompensated for by any corresponding advantage. After full dilatation and removal of the dilator, Dr. Metcalfe examined and found a very large piece of placenta hanging out of the os uteri, and thus the diagnosis was proved to have been correct.

Case 4.—I was called on the 14th of November, by Dr. Keeney, to see with him Mrs. R., a multipara, aged twenty-three years, who was nearly at the end of the seventh month of pregnancy. About one week before our visit, she had been suddenly seized with quite a profuse hæmorrhage, which had rapidly diminished, but never completely disappeared. The nature of the flow, which occurred by sudden gushes, and in great profusion, led us to the conclusion that it was due to placenta prævia, but as the period was not favourable to the viability of the child, we determined to avoid interference until the eighth month, if possible. The patient was accordingly kept perfectly quiet in bed, and all effort avoided. For two and a half weeks this plan appeared to succeed, and we had strong hopes of reaching a period when both child and mother might be rescued by premature delivery. When the seventh month and one week of the eighth had passed, the flow returned, and continued so steadily that, to our regret, we were forced to

empty the uterus in the interest of the child, who was evidently becoming much enfeebled by gradual placental detachment, and of the mother, who likewise felt the loss of blood very perceptibly.

At this period Dr. Keeney and I met at the patient's house at 8.30 P.M. At twenty minutes before nine I introduced Barnes's smallest dilator. At ten minutes after 9 the os was fully dilated, and I, introducing my hand, readily delivered a living child by version. The child was evidently very feeble, and, although at once wrapped in cotton and surrounded by an atmosphere heated to 95°, it lived only about nine or ten hours.

In this case, as soon as the os was fully dilated, the placenta could be distinctly felt, and as Dr. Thomas passed up his hand he found that it was centrally attached. It is the only case in which Dr. Thomas has met with complete placenta prævia. The mother recovered without an unfavourable symptom.

Aggravated Uræmia.—The pregnant woman is peculiarly liable to a form of desquamative nephritis, which probably depends in part upon the hydræmia attendant upon utero-gestation, and in part upon direct pressure of the enlarging uterus upon the kidneys and their bloodvessels. This condition, which marks its presence by albuminuria, anasarca, and the cerebral and gastric symptoms ordinarily attendant upon uræmia, has been appropriately styled puerperal nephritis. Unlike ordinary nephritis, and like that which results from scarlatina, it is usually ultimately recovered from. When complicating utero-gestation, however, this form of nephritis proves the most fruitful of all the sources of convulsions, œdema of the lungs, and puerperal mania. It developes generally after the sixth month, and becomes aggravated as the uterus continues to enlarge and exert greater pressure upon the kidneys. Sometimes, however, it does not appear till the end of the eighth month, when the danger to the patient steadily increases until the uterus has been emptied. This condition often calls for premature delivery, in order that the woman's blood may not become more and more impure, as greater and greater pressure upon the kidneys occurs; that the daily increasing risk of convulsions may be avoided; and that the child, in danger from the poison accumulating in its own as well as its mother's blood, may effect aëration by some other means than the contaminated placenta.

Dr. Thomas does not deem it essential to enter upon the subject of statistics as applied to the proportion of women affected by puerperal nephritis, who escape the evils which he has mentioned. He refers merely to a fact, that a large number of women, who suffer from all the symptoms of puerperal nephritis, escape those results of blood-poisoning to which he has drawn attention. Dr. Thomas does not advocate premature delivery merely because this complication of pregnancy exists. He divides all the cases of the affection into three classes:—

1. The class in which only a cloudiness of the urine developes under heat and nitric acid, and in which only slight anasarca and nervous disturbance exist. For this, no other interference is usually necessary than stimulation of the intestinal and cutaneous secretions, steady and systematic examination of the urine, and avoidance of tight clothing, nitrogenized food, and habits of luxury.

2. The class in which a copious deposit of albumen takes place under

heat and nitric acid; anasarca to a moderate degree exists; and gastric and cerebral symptoms show the influence of retained renal secretions to such an extent as to create considerable annoyance. For this class the general management already indicated should be pursued; the urine should be carefully examined every third or fourth day during the last two months of pregnancy, so that any increase of renal congestion might at once be recognised as an indication for interference, and the patient be delivered under chloroform.

3. The class in which the urine treated by heat and acid undergoes almost complete coagulation; excessive anasarca exists; the stomach, brain, and nervous system sympathize; and tendency to coma is denoted by constant desire for sleep. So long as cases of the first class keep within their legitimate bounds, they do not call for premature delivery. Even while those of the second class keep within their limits, they may require it, but do not of necessity do so; but in the third class this resource will always offer itself as a haven of safety for both mother and child. To express this more concisely, Dr. Thomas would say that the first class *very rarely*, the second class *sometimes*, and the third class *always*, calls for the induction of premature delivery.

For this indication Dr. Thomas has induced premature delivery three times. All the mothers recovered and two of the children. One child was known to be dead at the commencement of the process. Subjoined are short notes of these cases:—

Case 1.—Mrs. B., a multipara, aged thirty-two, had lost her father, mother, and one sister of Bright's disease, and in her only previous labour had suffered from convulsions, caused by puerperal nephritis. She advanced quite well to the seventh month, when suddenly the gravest symptoms of uræmia developed themselves. By general management she was carried to the end of the eighth month, when she could, without straining the point at all, be classified in my third group. At this time I used the warm douche at mid-day, separated the membranes by a silver catheter two hours afterwards, and at 6 P.M. introduced Barnes's middle-sized dilator. At 7 P.M. this was removed, and a gum-elastic catheter introduced to the fundus uteri. This soon excited labour-pains, and in three hours a large girl was born. The mother was delivered under chloroform. Both patients did well.

Case 2.—Mrs. W., a sister of the above, multipara, aged thirty, had been in a previous labour delivered by Dr. McClellan, of Brooklyn, of a living child by version; the operation being necessitated by convulsions, due to uræmia. Her urine was sent to me from Schenectady, at the seven and a half month. It coagulated under chemical tests, and I telegraphed her to come to New York. She did so, and although her symptoms placed her in my third class, I delayed interference until the end of the eighth month. At that time labour was induced as in Case 1. Mother and child did well, the labour only occupying about three hours, and coming on vigorously by use of the dilators alone.

Case 3.—Mrs. M., an Irishwoman in the lower walks of life, primipara, in the seventh month of pregnancy. I saw her, in consultation with Dr. J. J. Connolly, on account of the most violent and constant puerperal convulsions, which had continued for four or five hours. She was very œdematous, and between the attacks perfectly comatose. Having no dilators at hand, we used the warm douche for half an hour; then, finding the os dilatable, I introduced two fingers into the uterus and performed

bimanual version, delivering a still-born child. No fœtal movements had been detected for hours, and the fœtal heart had been inaudible. This woman recovered temporarily, but never got over the renal disease. About three years after this, I was called to see her by Dr. Vaughan, who had attended her in another labour. I found her giving all the evidences of uræmia, and suffering from violent mania, from which she died.

Excessive Vomiting.—This condition, usually existing as a morbid state before the fourth month, much more frequently demands abortion than premature delivery. Sometimes, however, it continues throughout pregnancy, or, as in the subjoined case, developes towards its close. Dr. Thomas has met with but one case, which has demanded the procedure which now engages our attention. The following notes were kept for the author by Dr. Sproat, house-physician of Bellevue Hospital:

Case 1.—Honora Curtin, an Irishwoman, married, aged about thirty-one, a domestic, was admitted to Bellevue Hospital, June 8th, 1869, and in the absence of Dr. Elliot came under the care of Dr. Thomas, who was replacing him. On entering the Hospital, she thought herself a little more than six months advanced in pregnancy, having menstruated last in December, 1868. Four days before entrance the patient was attacked with vomiting, which she at first attributed to abusive treatment by her husband, although she afterwards denied it. This vomiting had continued night and day, at intervals of not more than ten minutes. After her admission to the Hospital, all nourishment was given by the rectum, as the stomach could retain nothing.

All efforts at controlling the vomiting having failed, and the patient becoming constantly weaker, on the evening of June 10th she was anæsthetized by ether, and premature delivery induced by Dr. Thomas. The os uteri was dilated manually, a single finger being first introduced, and afterwards two, which were then separated as widely as possible. The dilatation was completed by the use of Barnes's largest dilator, and the child delivered by traction upon the feet. The whole operation was accomplished in twenty minutes. The uterus contracted well, the placenta coming away immediately. The child was alive, but survived only about four hours. The vomiting ceased on the second day after delivery, but the urine when tested gave signs of renal disease. The patient was discharged July 2nd, apparently well.

Placental Apnœa.—In a certain number of women a fatty, calcareous, or syphilitic degeneration affects the placenta one or two months before full term, and in repeated pregnancies destroys the lives of the children. Under these circumstances, where the intra-uterine lung, the placenta, becomes decrepit and inefficient, the indication for premature delivery, which enables the child to breathe by air instead of fluid, to live like a mammal and not like a fish, is very clear. The symptoms which notify the obstetrician when to interfere are: enfeebled movements on the part of the child, enfeebled heart-beat, and approach of the time when previous infantile deaths have occurred.

Commencing Epithelioma.—Pathologists now draw a broad line of distinction between the two great varieties of malignant disease which may affect the tissues of the uterus. First, we have true cancer, the removal of which is useless, because it invariably returns; and second, we have epithelioma, which, if removed in its earliest stages, may never return. Either form may develope in the pregnant uterus. If it be the latter which is discovered, it is recommended to empty the uterus

and amputate its neck. Dr. Thomas has never done this; but to give a clinical example of its performance, he avails himself of a case presented by his colleague, Prof. Jacobi, before the New York Obstetrical Society, and published in the proceedings of that body:

"Dr. Jacobi presented a specimen with the following history:—In July last, a woman eight months advanced in pregnancy (primipara) was admitted to the lying-in department of the Nursery and Child's Hospital. As is the rule in that institution, she was examined on admission by the touch and with the speculum. The house-physician, observing through the speculum a peculiar discoloration of the cervix, called the attention of Dr. Jacobi to the appearance. Dr. Jacobi found the cervix short, broad, and soft, the os being patulous, so that the finger could easily reach the os internum and touch the membranes.

"Through the speculum the part presented a greyish-white appearance, resembling the cauliflower cancroid. It bled readily when touched, and quite freely on the removal of a small piece for examination. Under the microscope it was seen to consist almost entirely of cells, mostly large pavement epithelial, and some spindle-shaped and smaller cells, a large amount of granular detritus, and spherical corpuscles enclosed in masses of concentric fibres. There could be no doubt that it was a papillary growth of the kind known as cauliflower excrescence.

"Dr. Jacobi determined to induce premature labour at once, with a view to the removal of the diseased part as soon as possible after delivery. He did not deem it safe to allow the woman to go her full time, lest, on account of the physiological congestion of the womb, and its rapid development at this period, the disease should advance, *pari passu*, and grow to such an extent as to greatly imperil, if not destroy, the chances of entirely removing it. He at once introduced his hand, turned, and delivered, the whole process being accomplished in about fifteen minutes.

"To lose no time, ten days after delivery, Dr. Jacobi proceeded to remove the diseased cervix. It was drawn down with great difficulty, and with the assistance of Dr. Guleke he succeeded, after numerous failures and the destruction of several wires, in encircling part of it with the galvano-caustic wire, and removing portions of the diseased mass. When it was no longer possible to remove any more in this manner, the olive-pointed galvano-caustic iron was applied to what remained of the cervix, and its destruction effected in this way. The patient recovered well after the operation, and was seen by Dr. Jacobi only a few days ago. He found, on examination, the cervix entirely gone, the uterus measuring about an inch and five-eighths in length. The cicatrix was smooth and firm, and the general health of the woman quite good. There was not light enough on this occasion for examination with speculum. The patient has menstruated since the operation."

Death of Child and Consequent Septicæmia.—When a child dies *in utero* during the latter months of pregnancy, it is often retained, usually without injury to the mother, until full term, and then expelled. So surely may we calculate upon this issue, that interference is not considered justifiable. In rare cases, however, great constitutional dis-

turbance is set up, and a low grade of blood-poisoning demonstrates its presence. Dr. Thomas has met with but one instance of this, which he gives in illustration :—

Case 1.—N. P., a handsome young American woman, aged about twenty-five years, the mistress of a gentleman of this city, sent for me at the eighth month of pregnancy. I found her suffering from hectic fever which came on every afternoon, and which was followed by profuse sweating, which lasted all night, saturating her night-clothes, and exhausting her excessively. Upon examination I found that she carried a child *in utero*, which was evidently still, and, as she positively asserted, had been so for a month. Strongly suspecting that a criminal delivery had been attempted at the seventh month, which had failed to produce expulsion, but succeeded in destroying the life of the fœtus, I refused to interfere, but watched the case for two weeks. At the end of this time the patient was so much prostrated by constant vomiting, profuse sweating, and recurrent attacks of fever, that I feared to delay longer, and at the eighth and a half month brought on delivery. A putrid child was expelled, upon which I could discover no signs of injury. After delivery the mother was very ill with obscure typhoid symptoms, but ultimately entirely recovered.

Threatened Death of Child.—Dr. Thomas has already stated that in women who habitually suffer from disease of the placenta, and in consequence bear still-born children, the induction of premature delivery is decidedly indicated. If the life of the viable child be threatened from any other cause, the same remark holds true. The following conditions are examples of those which most frequently call for the operation in this connexion :—Accidental hæmorrhage or uræmia existing in such degree as not to endanger the mother, but to jeopardize the life of the child; a blow upon the abdomen; a fall, exerting its direct force upon any part of the body, and by *contre-coup* affecting the uterus and its contents; or any other influence which impairs the safety of the child without seriously implicating that of its mother. Dr. Thomas gives one instance in which the operation was resorted to for the fulfilment of this indication :—

Case 1.—Mrs. P., a healthy multipara, had advanced to the seventh month of pregnancy without developing any unpleasant symptoms, when suddenly all those which I have enumerated as bringing a case into my second class under the head of uræmia presented themselves. Dr. Metcalfe, who now saw her with me, agreed in the propriety of limiting our treatment to general means, and keeping the case under strict supervision until the eighth month was arrived at. Then, if indications pointed to the necessity of delivery, it was to be induced. I saw the patient twice or three times every week, examined the urine regularly, and saw with pleasure that no increase of bad symptoms occurred. About one week before the end of the eighth month, Mrs. P. sent for me and told me that the movements of her child were becoming very feeble, and that she felt sure it was growing weaker daily. I found the fœtal heart almost inaudible, and could discover no movements of the fœtus upon prolonged examination. Dr. Metcalfe saw her on the next day, and, corroborating these observations, advised immediate delivery. We accordingly met at the patient's house at 8 P.M., and, after using the warm douche for half an hour, I introduced the smallest of Barnes's dilators, and in an hour the first stage of labour was accomplished. But the uterus could not be excited to action for a length of time, even by the most energetic urging. Uterine catheteriza-

tion and the use of stimulating enemata failed to cause the second stage to inaugurate itself. On the next day, however, about 10 A.M., uterine contraction occurred, and a male child was easily and rapidly expelled. To my great disappointment, it was still-born. The fears of the patient had evidently been well founded, and interference had come too late, prompt as it was.

Approaching Death of the Mother.—Dr. Thomas draws attention to the fact that he does not, in stating this indication, speak of threatened death or prospective death. From his stand-point he is supposing the mother beyond the hope of recovery, and in such a condition that the vitality which remains to her may be legitimately exhausted in an effort to save the life of her offspring. As examples of this condition Dr. Thomas would enumerate the last stages of phthisis, cancer, aneurism of the aorta, Bright's disease (not puerperal nephritis), cerebral disease, &c. In illustration the following is given:—

CASE 1.—Mrs. C., a multipara, weighing about two hundred pounds, forty years of age, and previously in perfect health, sent for me very hastily, in the absence from the city of Dr. Metcalfe, her ordinary attendant. I found her in great trepidation, crying, and declaring that she was sure she was going to have a fit, from the fact that she had suddenly been taken with a violent headache, vertigo, ringing in the ears, and disordered vision. The flowers which constituted the carpet pattern were, she said, rapidly revolving, so that she dared not look at them. Her pulse was full and bounding, face suffused, eyes projecting, and vessels of the neck distended. She lived very near my residence, and, obtaining a phial of her urine, I hastened home to test this and get a lancet. In twenty minutes I returned to her house, and found that in the short time of my absence she had had one violent convulsion. This had evidently caused the rupture of one of the vessels of the brain, for almost complete hemiplegia existed. Drs. Edward Delafield and Charles Henschel at this moment entered the room, and with their sanction I drew about a quart of blood from the arm, but Mrs. C. remained comatose and hemiplegic. No other convulsion occurred, all the symptoms pointing to serious organic lesions in the brain, and the patient behaving like one in ordinary apoplexy. Dr. Metcalfe returned in forty-eight hours, and took charge of her, I seeing her only occasionally. On the fifth day of the attack it was evident that she was sinking rapidly, and as the child, which was just at the seventh month of intra-uterine development, was living, it was determined to deliver it. In accordance with this decision, I easily and rapidly dilated the cervix with Barnes's dilators, performed bi-manual version, and delivered a living child, which has since grown to be a large and very vigorous girl. The mother, who was completely comatose and almost moribund at the time of the operation, died in the course of twelve hours. I neglected to state earlier in the history that the urine which I obtained on the day of the convulsion became absolutely gelatinous under heat and nitric acid.

In this case, as we felt sure that a cerebral vessel was ruptured, we did not bring on labour earlier for fear of increasing the effusion. It was finally induced at the expense of the rapidly-failing strength and prospects of the mother, in the interest of the child.

Amniotic Dropsy.—Sometimes the amnion, which ordinarily secretes a limited amount of fluid, takes on excessive action and distends to a dangerous degree the uterus, which, in consequence, interferes with the physiological action of the abdominal viscera, the diaphragm, lungs, and

heart. The diagnosis of this condition is always obscure, but in some cases may be made by the existence of a very large and fluctuating uterus, great obscurity of sensation of fœtal movements by the examiner, excessive dyspnœa, and tendency to syncope. The diagnosis being made, the only means by which a continuance and increase of these dangerous symptoms can be avoided is the induction of premature delivery.

Previous Rupture of the Uterus, or Performance of the Cæsarian Section.—After traumatic solution of continuity in the uterine fibres perfect union may occur, and utero-gestation subsequently proceed to full term. But the violent efforts demanded from the uterine fibres for expulsion of the child make the risk of a second rupture very imminent. Where such an occurrence has taken place, therefore, it may become advisable to avoid prolonged effort during the first stage by accomplishing cervical dilatation by means of Barnes's dilators, and during the second by the forceps or bimanual version.

Previous Difficulty in Deliveries of large Children, or of Children with ossified Sutures.—When a woman has suffered in previous labours from one of these causes, the induction of labour two or three weeks before full term may alter the entire phase of the process, and avoid dangers for both mother and child, which would otherwise be inevitable.

Excessive Accidental Hæmorrhage, if not controlled, would prove not only dangerous to the mother, but to the child. When ordinary means do not check it, it would evidently be proper to empty the uterus prematurely, in the interest of both patients.

Tumours obstructing the Pelvis create in less degree the dangers attaching to deformity of this canal, and, for the same reasons which would warrant premature delivery under those circumstances, it would be indicated here.

In conclusion, Dr. Thomas recapitulates the cases reported, and makes a few remarks upon the management of the prematurely-delivered child. His experience in the induction of premature delivery extends to thirteen operations. Of these—

2	were	performed	for	deformed pelvis.
4	„	„	„	placenta prævia.
3	„	„	„	uræmia.
1	was	„	„	excessive vomiting.
1	„	„	„	septicæmia.
1	„	„	„	threatened death of child.
1	„	„	„	approaching death of mother.

Of the children, ten were delivered living, of which number two died subsequently; one delivered at the sixth, and one at the seventh month. Of the mothers, one died. Of the three children delivered still-born, two were known to be dead before the operation was performed; and the mother who died was supposed to be moribund before interference was established.

One reason for the mortality of premature children is to be found in their inefficient heat-making powers. If such a child be washed, wrapped in flannels, and treated as one at full term ordinarily is, it may die, when a different plan might have saved it. Prevent a child at term from

having its animal heat abstracted, and it will supply itself abundantly; but to the body of the premature child extraneous heat must be added to keep it from dying of cold. To carry out this idea practically, Dr. Thomas does not allow a premature-delivered child to be washed for a week or more, and always keeps it during that time in a temperature of from 90° to 95°, thus striving to let it feel as little as possible the change in the locality as far as this circumstance is concerned. It is difficult to do this, unless every preparation be systematically made beforehand. The plan which Dr. Thomas follows consists in having a tin tub placed within one of larger dimensions, so that from three to four inches may everywhere intervene between the walls of the two. At the upper portion of the piece of tin which holds them together a funnel is fixed, and at the lower a spigot. Into the former hot water is occasionally poured; and, when removal is necessary, this is allowed to flow away from the latter. In the inner tub a large supply of cotton or wool is placed, and in this the child is enveloped and constantly kept until all fear as to its power of generating sufficient animal heat has passed away. Within this receptacle hangs a thermometer which indicates the temperature. No difference should be made in the management of the child in the hottest part of the summer. Even if the thermometer ranges at 95° in the room, these precautions are essential. When it is not convenient to obtain anything else, an ordinary basket, with bottles of hot water laid in the bottom, and filled with cotton or wool, will answer for the purpose of keeping the child warm.

But the prognosis as to the child must always be governed by its intra-uterine age. Little hope should be entertained if the delivery be brought on at or just after the seventh month; almost none should be indulged in before the seventh month, while a child delivered at or after the eighth month, provided its vital forces have not been depreciated by the abnormal state which has necessitated delivery, has, with proper management, almost as good a prospect of life as one arrived at full term.

The end of the eighth month, *i.e.*, the ninth menstrual epoch, is the most favourable time for the induction of premature labour.

Art. 234.—*Note of a Case of Rigid Os Treated by Hydrochlorate of Apomorphia.**

By Dr. Milne.

(*Edinburgh Medical Journal*, January.)

"In June last I was called to attend Mrs. S., Melville Terrace, in labour with her fourth child. On arrival I found she had been suffering for three or four hours, and the pains were pretty strong. The os was about the size of a sixpence, and rather hard. The head was below the brim. Previous labours natural and easy. Two hours after, on making a second examination, I was rather astonished to find that, despite pains

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* Read at a Meeting of the Obstetrical Society of Edinburgh.

of a second-stage character, little if any progress had been made. I introduced my finger within the os, and describing its circumference rather firmly, I found it intensely firm and resistant. I then placed the patient under the influence of chloroform, and commenced to dilate cautiously with the finger. Little good, however, was done by these means, for at the end of eight hours the os still remained about the same size. I then procured a little tartarated antimony, giving two grains in two hours. This, though producing vomiting and ample nausea, secured neither the softening nor the expansion of the os. As the pains were continuing rather strongly, I administered twenty-five minims of liq. morph. hydrochlor., and left for some time. On returning three hours afterwards I found that matters were still much the same, the morphia neither having moderated the pains nor helped to reduce the induration of the os. Having brought with me a little hydrochlorate of apomorphia, I resolved on giving it a trial, being aware of its power as an emetic. A solution containing $\frac{1}{4}$ grain was given. In about ten minutes the patient vomited, and the pains were subdued a little, being less frequent and forcible. On examining again, to my delight the os had softened and expanded immensely, a single sweep of the finger serving to complete it. The pains redoubled their force, and in a few minutes more delivery was accomplished.

"*Remarks.*—Cases of rigid and unyielding os are familiar to most obstetricians who have seen much practice, and there are few of us but have spent many weary hours over instances of this kind. I would, therefore, not have thought of reporting it but for the fact that I obtained such efficient aid from a new drug, and that probably we have got a novel uterine relaxant of considerable power. I say probably, because a single case can no more test a remedy—establish a rule—than a few green leaves can make a summer. It is true that the very rigid os relaxed in a twinkling almost after the apomorphia had time to act, as if the one were cause and the other effect; but then the other relaxants may have helped to pave the way, and the growing exhaustion of the patient may also have pioneered. Further trial is therefore requisite before we can laureate it much, and this I intend giving it as opportunity offers. If it should maintain its character as a uterine relaxant —the antipodes of ergot—and effectually throw open the door of the uterus in extreme cases, I need hardly say that we shall have obtained a drug of unspeakable value; for a fundus and body contracting powerfully, and an os refusing to expand, is about one of the most distressing complications in midwifery. It is a house divided against itself, a perilous antagonism, and has been fruitful of such deplorable results as inflammation, rupture of the uterus, convulsions, exhaustion, and death. For myself there are many other complications that I would prefer before it. The medicines that I employed prior to the apomorphia are those commonly used, and in general prove effectual; the chloroform and antimony, with a little fingering, proving a good triped on which to rest in these cases. Here they were ineffectual. I may state that I have long since abandoned belladonna, from a conviction that however infallibly it may dilate the sphincter of the eye, it is next to useless here. I have never bled in such cases, believing that the remedy is worse than the disease—that is to say, while you may secure in some

cases the solution of the rigidity, you do it at a very great ransom; you enfeeble a patient already weak, and the subject of other causes and sources of debility. Incising the os is a line of treatment I have only once had occasion to adopt, viz., in a case of cancer; and although it is supported by great names and warranted by considerable success, yet we have always the feeling that the incisions may go further than we desiderate, and that the patient may in consequence fare all the worse. Of course there will always cast up now and then cases beyond the power of medicine, and amenable only to the scissors or knife; but wherever medicaments can accomplish the work they ought to be employed because less beset with danger.

"I do not know that we can hope for much benefit from the apomorphia in cases of undeveloped os and cervix, such as in some cases of placenta prævia, at all events it ought to have a trial. Being also a sedative, it may in some instances lay an arrestment on the pains, the presence of which, until the os be dilated, is a source of peril. If it fulfil the twofold function of opening up the os uteri, and laying for a time an embargo on the uterine contractions, it will solve a difficult problem in this complication and confer inestimable good.

"In reference to the mode of administration of this drug, I may remark that it is much more powerful when injected into the cellular tissue. Were the stomach in any case, therefore, rejecting most things, it could be given by means of Wood's syringe."

Art. 235.—*On the Application of Electricity in Labour.**

By M. De Saint-Germain.

(*Gazette Hebdomadaire*, No. 48, 1869.)

The author has derived the following conclusions from his investigations on the use of electricity in labour:—

"1. In no case was I able to excite uterine contractions when these had not previously appeared spontaneously.

"2. Every time when labour had commenced and pains succeeded each other with intervals of a quarter of an hour or twenty minutes, the conductors having been applied to the sides of the abdomen, I constantly remarked, at about the end of ten minutes, a considerable amelioration of the uterine contractions.

"3. I have also made out that every contraction excited by electricity is longer and more painful than other contractions.

"4. Dilatation of the neck of the uterus seems to me to proceed constantly with rapidity under the influence of galvanic excitation.

"5. In every case the expulsion of the placenta immediately followed that of the infant.

"6. In two instances only did I observe upon the new-born infant a slight thick coloration; in one of these cases could the cyanosis be attributed to a well marked circular constriction."

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* Communicated to the Société Impériale de Chirurgie.

Art. 236.—*Successful Version after Failure of the Forceps.*

By J. Braxton Hicks, M.D., F.R.S.

(*Guy's Hospital Reports*, vol. xv.; and *British Medical Journal*, March 19.)

Seven cases are reported, of which, however, only six fairly come under this denomination, as the other case was one to which Dr. Hicks was only called when the woman was dying. The forceps and version had both been tried, and the latter proved successful only so far as to deliver the trunk *minus* the head; meanwhile the uterus was ruptured, and the patient only lived a few moments after Dr. Hicks's arrival. The other cases may be briefly summed up as follows: All were head presentations, one of the face, and one partial brow. Only two were primiparæ; three others had had difficult labour, with dead children, with forceps or craniotomy, previously. In all there was considerable pelvic contraction, and the forceps failed after fair trial. Version proved successful in delivering all the mothers safely. Four of the children were born alive, but only lived a few moments. Considering the difficulties encountered, we think these cases are ample justification of Sir James Simpson's proposal, of which Dr. Braxton Hicks is an able supporter and exponent.

Art. 237.—*Successful Reduction of Prolapsed Funis by the Postural Method.*

By John Brunton, M.A., M.D., Surgeon to the Royal Maternity Charity.

(*British Medical Journal*, December 18, 1869.)

The following case is narrated by Dr. Brunton:—

"On October 26th, 1869, I was called to attend Mrs. H., aged twenty-seven, in labour with her first child. She had been ill for ten hours, and her pains were aetive, occurring every few minutes. On examination, I found the os uteri dilated to the size of a crown-piece, the head presenting, a bag of membranes protruding, and in this bag was a loop of funis. This I deemed it proper at once to reduce, in case pulsation still existed, though I had not detected it through the membranes. Placing the patient on her knees in bed, with her head as low as she could put it, I partly introduced my hand into the vagina, ruptured the membranes, and just as pain came on I pushed up the loop (now about six inches long) alongside the head; and, as the head was pushed down by the pain, the cord was reduced. No prolapse afterwards occurred. Some hours afterwards, I delivered the child by forceps, on account of a very narrow pelvic outlet. The child was dead. The mother had not felt any fœtal movements for several days. The placenta was calcareous, and in some parts fibrous; during labour, as the liquor amnii escaped, it was thick with meconium. The mother made a good recovery. By withholding fluid, and allowing a liberal supply of ice to allay her thirst, little or no milk formed in her breast."

Art. 238.—*Case of Partial Placenta Prævia; Version; Recovery of Mother and Child.*

By Dr. Jasper Cargill, of Linstead, Jamaica.

(*The Lancet*, January 22.)

The following case is related by Dr. Cargill:—

"On the morning of the 7th August, 1868, I was summoned to attend Mrs. D——, aged forty-six, who resided nine miles from my residence. She was the mother of a large family, and had never had a bad labour. She wanted three weeks of her full time.

"I was informed that, while in her bath on the morning of the 2nd August, Mrs. D—— was alarmed by a sudden gush of blood, without any uterine pain whatever. She felt faint, and went to bed. All that day she continued to lose blood at intervals. On the 3rd, she felt better, and there was very little bleeding. On the 4th, slight uterine pains came on, and gushes of blood during each contraction. This continued during the 5th and 6th. Very early on the morning of the 7th, she was seized with strong rigors, and the loss of blood was alarmingly great. A neighbouring druggist was consulted, who at once advised my being sent for.

"I arrived at 10.30 A.M., and found Mrs. D—— in a very critical state. Her countenance was pinched and anxious; pulse at wrist hardly perceptible. She was in a profuse cold perspiration, and her breathing short and quick. The bed and bedding were saturated with blood. The pains, which had been constant and feeble, had entirely ceased. Having removed the napkins, I found the vagina filled with clotted blood. On introducing my hand, I felt the os uteri high up, and fully dilated. The membranes were entire, and the child's head presenting. The placenta was attached to the posterior edge of the cervix, and a portion of it detached and curled up, so that the lip of the os could be felt beneath it. I at once gave half a drachm of the liquid extract of ergot, hoping to induce pains, and perhaps bring the head within reach of the short forceps. Having waited ten minutes, I repeated the ergot, by which a few feeble pains were excited. At this period a gush of blood warned me of the danger of any longer delay. Having repeated the ergot, I at once turned. I found no difficulty in reaching the feet; one of which I seized, and turned during the flow of waters. I delivered the child as quickly as I could, and lost no time in removing the placenta. The uterus, on being relieved of its distension, readily contracted. The child (a boy) was still born for a few minutes, and required the usual means to restore it. When I left the house in the afternoon, both mother and child were in a favourable condition. The mother recovered rapidly, and the baby is now a fine-grown child. The placenta was of the usual size, and the detached portion thick and congested.

"Dr. Tyler Smith, in his *Manual of Obstetrics*, writes, with reference to placental presentation, 'In my opinion, turning is the great operation in placenta prævia when the child is living and viable.'

"On the 11th of September, 1863, I treated a case of placenta centralis by version, and saved mother and child. I am, therefore, fully

persuaded that turning is *the* operation in these cases whenever the conditions of the case render it possible."

Art. 239.—*Case of Partial Placenta Prævia, terminating Successfully without Manual Interference.*

Under the care of Mr. Edward Adams.

(*The Lancet*, December 18, 1869.)

D. F——, aged twenty-five years, married, was admitted into the lying-in department of the St. Matthew's Infirmary, Bethnal Green Workhouse, to be confined of her sixth child, on the 6th of May last, when she had acute labour-pains, but not of a bearing-down character. About a month previously she began to have a copious discharge of blood at intervals. On admission, the os was about the size of a half-crown piece, and patulous. There was hæmorrhage during the pains, which came on about every quarter of an hour. Ordered cold wet cloths to be applied to the vulva, with cold drinks, such as tea, milk, beef-tea, &c.; also dilute sulphuric acid, ten drops in camphor water and a grain of opium. She was examined again four or five hours afterwards. The os was found cushiony, and dilated to the size of a five-shilling piece. Hæmorrhage was not alarming. The placenta could be felt adherent posteriorly; but anteriorly the finger passed into the body of the uterus, and came in contact with the head of the fœtus.

At 7 A.M. next morning the child was born suddenly, and afterwards the placenta came away. The child was born alive. Uterine hæmorrhage profuse, controlled by cold water poured from a height on to the abdomen, and tight bandaging with a padded book; and a saline mixture, with acid and opium, in camphor water, internally. On the 9th the child was found to be jaundiced; the mother losing less. On the 10th the patient was ordered a pint of beer, and meat diet. Mother and child doing well. The mother was allowed to sit up a little on the 12th. Rapid convalescence from the last date, and the patient discharged at the end of a month well. It might be added that brandy was cautiously administered during labour.

Art. 240.—*On Transfusion of Blood.*

By Dr. Ch. Marmonier.

(*De la Transfusion du Sang.* Paris.)

The following are some practical conclusions that have been formulated by M. Marmonier:—

1. The operation of transfusion is not a difficult one to practise, and it requires no special apparatus.

2. The dangers of this operation are less than has been generally thought.

3. It is not necessary to warm the blood before injecting it.

4. 150 or 200 grammes of blood is generally a sufficient quantity.
5. It is not indispensable to defibrinate the blood.
6. Finally, this operation should be but an extreme measure reserved especially for combating post-hæmorrhagic collapse.

Art. 241.—*Report of a Case of Puerperal Fever treated by the Injection of Ammonia into the Veins.*

By Tyler Smith, M.D., F.R.C.P.

(*British Medical Journal*, December 18, 1869.)

At a meeting of the Obstetrical Society of London on Dec. 1st, Dr. Tyler Smith read a paper on a case of Puerperal Fever, treated by the Injection of Ammonia into the Veins, followed by recovery. The patient, a primipara, was delivered by forceps on November 1st. On the 5th, symptoms of puerperal fever supervened, and on the 12th, she was in such imminent danger that Dr. Smith determined to try the injection of ammonia into the veins, as practised by Dr. Halford, in Australia, for snake-bite. The operation was performed at 7.45 P.M. Half a drachm of a solution containing one part of liquor ammoniæ to three parts of water was injected into one of the veins of the right fore-arm. As soon as two or three drops had been injected, she roused, and complained of severe pain in the opposite arm. When the operation was completed, there was very great pain over the whole body, with intense smarting of the right arm. This continued without abatement for several hours. The sickness closed at 11 P.M., but the bowels were moved four times in the course of the night. Towards morning the pain subsided, and she got a little sleep. On November 13th, the abdomen had much diminished in size, and the pulse had fallen to 100. On the 14th, she felt better, and was quite sensible, though pale and weak ; pulse 108 ; the right arm, at the seat of puncture, was red and swollen, and the veins of the whole arm were distinctly mapped out. She was able to take a little food without sickness. On the 15th, the tongue was becoming natural; the abdomen was smaller. On the 17th, she was still progressing favourably ; a small ulcer had formed on the right arm, at the seat of puncture. A slight relapse occurred on the 20th; but after the 22nd, her improvement was uninterrupted. Dr. Smith observed that he had never seen a patient in a similar condition recover; and although he adopted this treatment in this case alone, so successful was the result, that he had felt it incumbent upon him to bring the particulars before the Society.

Dr. Aveling would have liked a fuller account of the history of the plan of injecting medicinal fluids into the veins.

Dr. Barnes said that reference to the history of venous injections did not diminish the merit of applying this method to the treatment of puerperal fever. In this disease it was often difficult to get remedies absorbed; the only hope seemed to be in direct injection into the vascular system. He had already said that the injection of saline fluids and transfusion ought to be largely extended; and in his work on

obstetric operations he had advised it in certain cases of puerperal convulsions, fever, and obstinate vomiting. He doubted whether the fluid used by Dr. Smith was the best; he should prefer a fluid like Dr. Little's, made of similar specific gravity to that of the blood, adding a little ammonia and alcohol. He thought the indication was to carry the ammonia in a considerable bulk of fluid, not concentrated.

Mr. Spencer Wells had been much struck by Dr. Halford's reports; and last March he had injected half a drachm of liquor ammoniæ into one of the veins of a woman, two days after ovariotomy. The pulse and temperature had risen to 140 and 102·8, with the usual signs of fibrinous deposit in the heart. Scarcely more than a momentary revival followed this injection, nor more after another by Dr. Junker, two hours afterwards. A large clot was found after death, filling up the left ventricle. Mr. Wells suggested that, if Dr. Smith's example be followed, great care should be taken only to inject ammonia when there is an excess of fibrine in the blood.

The President observed that the Society was much indebted to Dr. Tyler Smith for bringing this interesting case forward. One swallow did not make a summer, but new facts were always deserving of attention.

Art. 242.—*On the Cæsarian Operation.**

By M. Guéniot.

(*Gazette Hebdomadaire*, No. 11, 1870.)

"It is generally believed that the Cæsarian operation in Paris has always been fatal to the mother. I can, however, quote six well-authenticated cases of success which occurred between 1740 and 1787: these cases were reported by Doumain, Vermont, Millot, Deleurye, Lauverjat, and Coutouly. Since that time the population of the French capital has considerably increased, but public hygiene has progressed in the same proportion, and, by modifying the operative proceedings, one may be able to render more satisfactory an operation which for eighty-three years has been invariably followed by reverses.

"With this end in view three orders of facts have to be taken into consideration; these are: (1) The bad symptoms or complications which induce death after the operation; (2) the mode in which the cure is effected in successful cases; (3) finally, the instruction furnished to us by the practice of ovariotomy.

"Peritonitis and putrilaginous metritis are the two most formidable complications. It is necessary then to endeavour to prevent or to contend against these. Cases of recovery teach us that a discharge of blood is often set up from the inferior part of the abdominal wound; and, moreover, that the womb contracts more or less extensive adhesions with the anterior abdominal wall; it is indicated therefore to favour as much as possible the production of these two phenomena. Finally, the practice of ovariotomy has demonstrated that the surgeon may incise

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* Communicated to the Société Impériale de Chirurgie.

and sponge the peritoneum without causing any very severe symptoms; but that it is necessary to avoid leaving any dirt upon the viscera and any portion of putrescent matter on the abdominal serous membrane. Such are the three sources of the indications on which the surgeon ought to depend in modifying advantageously the operative procedure of hysterotomy.

"I think that it is well to rupture the membranes artificially before the commencement of the operation. The incision of the abdominal wall ought to be directed according to the inclination of the uterus, so that the two wounds—the abdominal and the uterine—may preserve a parallelism and the lochial discharge may readily flow outwards. An abdominal incision of from sixteen to eighteen centimetres is generally sufficient.

"No putrescent matter should be left in the peritoneum. M. Tarnier unites the globe of the uterus whilst still intact to the lips of the external wound. In this practice there are two sources of inconvenience. The numerous punctures necessitated by the suture process, produce by themselves effusion of blood into the peritoneum; and then the womb bound by two rows of threads, is more exposed to gangrenous inflammation. It is necessary to operate externally to the abdomen by making the anterior segment of the womb project between the lips of the abdominal wound. Exact occlusion having been thus made, the uterus is then incised, and the infant afterwards extracted by dragging the womb more and more from the interior of the abdomen. After delivery, when the uterus has become well retracted, and the hæmorrhage has ceased, the organ is allowed to return behind the abdominal wall. It is important to keep the patient at absolute rest for the thirty-six hours immediately following the operation."

Art. 243.—*Peritonitis and Death following an Intra-Uterine Injection.*

By Dr. Haselberg.

(*Monatsschrift für Geburtskunde*, Band xliii. Heft iii. 1869; and *Gazette Hebdomadaire*, No. 13, 1870.)

A young woman, twenty-two years of age, who had had a premature labour six months previously, was treated for anteflexion of the uterus sufficiently pronounced to render difficult the passage of a sound. The vaginal portion was dilated, and there was also ulceration which bled readily on the anterior lip, and also in the cavity of the cervix. This ulceration was cauterized by nitrate of silver. There was abundant hæmorrhage, having its origin partly in the dilated vessels which surrounded the ulceration and partly in the cavity of the uterus; even when the ulceration had been almost entirely healed, there was abundant metrorrhagia. It was then decided to attempt an injection of perchloride of iron, but it was not until after repeated trials that the end of the sponge could be carried beyond the point of flexion of the cervical canal and into the uterine cavity. The patient did not complain of pain after the operation; but in the night there was a violent rigor followed by

sweating. This rigor was repeated for several nights in succession notwithstanding the employment of sulphate of quinine. The patient passed into a state of collapse, even before symptoms of peritonitis were manifested. On the fifth night the rigor was followed by excessive vomiting, and immediately afterwards pain came on in the abdomen. On the next night during vomiting, the patient suddenly experienced an acute pain in the abdomen, fell into a state of syncope, and died.

Autopsy.—Abdomen distended; an escape of a great quantity of gas on opening the cavity. Intestines glued together by recent exudation; the lower part of the peritoneal cavity filled with greyish pus of a putrid odour. The origin of this effused material was found to be a cyst of the right ovary, having the size of an egg. This cyst was ruptured, and through the orifice which it presented could be observed the protrusion of some pultaceous matter. At the superior surface of the cyst was seen the opening of the right Fallopian tube. Through the orifice of the tube could be passed a large sound, which was carried readily along the canal into the cavity of the uterus.

The uterine mucous membrane presented black spots, like ink stains, and a similar discoloration could be observed along the whole extent of the mucous membrane of the right Fallopian tube. The mucous membrane of the left Fallopian tube was of a greenish colour. On examining the patches of discoloration of the mucous membrane, they were found to be infiltrated with iron. The nature of the discoloration was demonstrated by prussiate of potash and sulphate of ammonium.

Dr. Haselberg is persuaded that in this case the injection was the origin of the peritonitis; he is nevertheless a partisan for intra-uterine injections. Opinions are actually much divided with regard to the possibility of the penetration of fluids into the Fallopian tube and the abdominal cavity. The recent researches of Hennig and Klemm have shown that it is very difficult, in normal conditions and on the dead subject, to cause liquids to penetrate into the Fallopian tubes, and moreover that, in order to observe this phenomenon, it is necessary to have occlusion of the orifice of the cervix uteri and strong pressure. Thus, *à priori*, it seems a difficult matter to admit this penetration in the living subject. But, on the other hand, it has been demonstrated by Hildebrandt and Dr. Mathews Duncan that, in certain cases, the Fallopian tube is much dilated and remains patent. A disposition of this kind existed in the present case related by Dr. Haselberg.

Besides, the possibility of the penetration of injections into the Fallopian tubes has been demonstrated by a series of observations. To cite only two recent cases, Gaillard Thomas speaks of an instance where the liquid penetrated through the Fallopian tube, and Mandl establishes that this occurrence is frequent, and that a simple drop of water in the Fallopian tube may cause the most acute pain. Mandl has reported a case of fatal peritonitis after an intra-uterine injection. Other accidents may accompany injections, such as laceration of the uterus and hæmatocele, which may result even from the introduction of the canula. A case reported by Voisin has proved that a vaginal injection is capable of causing fatal peritonitis. In a work of Montrose Pallen, in which are analysed fifteen cases of intra-uterine injection, there is related an instance of fatal peritonitis after an injection of tincture of iodine.

This agent was afterwards found in the uterus, the Fallopian tubes, and the abdominal cavity.

The author of this contribution avows that it is difficult to guard against these complications in cases of dilatation of the Fallopian tubes. He thinks that sufficient protection is not afforded by a preliminary dilatation of the uterus. The best means, according to Haselberg, is to withdraw by aspiration with the syringe the excess of injected fluid.

Art. 244.—*On the Complication of Pregnancy with Ovarian Disease.*

By T. Spencer Wells, F.R.C.S.

(*British Medical Journal*, December 18, 1869.)

At a meeting of the Obstetrical Society of London, on December 1st, Mr. Wells related fifteen cases of pregnancy complicated with ovarian disease which had fallen under his own observation. In three cases sudden death followed spontaneous rupture of the cyst, in or before the seventh month of pregnancy. In two cases pregnancy and ovarian disease went on together without interference, and lingering labours ended in the birth of still-born children. In one case twins were born alive; but the mother had suffered greatly from distension. In one case five, and in another six pregnancies had gone on, and ended normally without interference, but in the last case, the cyst ruptured spontaneously in the seventh pregnancy. Five patients were tapped during pregnancy; one, twice; one, three times; and three, one each. In all, five living children were born after natural labours. In one of them, ovariotomy was successfully performed, four months after delivery. In one case, ovariotomy was performed in the fifth month of pregnancy, the uterus was emptied at the same time, and the patient recovered. In the concluding case of the series, ovariotomy was performed successfully in the fourth month of pregnancy, after spontaneous rupture of the cyst and peritonitis, pregnancy proceeding without interruption. The author believed that a careful consideration of these cases would lead to the following conclusions:—1. Pregnancy and ovarian disease might go on together, and end safely both to mother and child. 2. But, in a large proportion of cases, probably in nearly all where the ovarian tumour was large, there was danger of abortion; or, if the pregnancy proceeded to the full term, of lingering labour, and a still-born child; and throughout the later months of pregnancy there was danger of sudden death to the mother, from rupture of the cyst, or rotation of its pedicle. 3. Spontaneous premature labour might not save the mother from these perils; and the induction of premature labour almost implied sacrifice of the child, with considerable risk to the mother. 4. There was no proof that tapping an ovarian cyst was more dangerous during pregnancy than at any other time. It would generally afford immediate relief to distension, and lead to the normal termination of pregnancy in the birth of a living child, at a very slight risk to the mother, if proper precautions were taken to prevent the escape of ovarian fluid into the

peritoneal cavity, and the entrance of air into this cavity and into the cavity of the cyst. 5. If an ovarian cyst should burst during pregnancy, removal of the cyst, and complete cleansing of the peritoneal cavity, might save the life of the mother, and pregnancy might go on to the full term. 6. Of three cases on record where a pregnant uterus had been punctured during ovariotomy, the only recovery was in the one case where the uterus was emptied before the complication of the operation.

Art. 245.—*On the Cæsarian Operation.**

By M. Tarnier.

(*Gazette Hebdomadaire*, No. 10, 1870.)

"The three chief accidents likely to attend the Cæsarian operation are: hæmorrhage, hernia of the intestine, and the passage of lochial fluid on to the peritoneum. The hæmorrhage proceeds chiefly from the uterine wall; the blood flows away in clots, especially if the placenta be inverted upon the anterior wall of the uterus and the strength of the woman be reduced. After the fœtus has been removed, and when manual pressure is made upon the surface of the abdomen, the blood penetrates into the peritoneal cavity, and peritonitis is set up. When the uterus is empty, a hernial protrusion of intestine occurs, which is covered by the blood from the uterus, and is injured in the process of reduction. Finally, at the termination of the operation, sutures are applied to the abdominal walls only; the uterine wound remains patent, so that the lochia can penetrate into the peritoneal cavity.

"Let us consider now whether the operative proceedings hitherto recommended enable one to avoid these accidents. I put on one side Levret's operation in which the uterine wound remains intact. In the proceeding of MM. Lebas and Lauverjat the penetration of the lochia into the peritoneum is prevented by making the uterine suture. In the first operation performed by myself I attempted this suture; it is almost impossible to bring together the peritoneal portion of the lips of the uterine wound. Martin, of Berlin, makes the utero-parietal suture, uniting the right side of the uterus to the right side of the abdominal wound, and the same for the left side; he hopes in this manner to prevent the penetration of the lochia into the abdomen. M. Lestoquoy, of Arras, incises the uterus, leaves the membranes intact, and afterwards makes Martin's sutures; this operation was attended with success. The contents of the uterus were then torn away and the child withdrawn. Sutures were not applied externally. In this manner penetration of blood and lochial discharge into the peritoneum and also hernial protrusion of intestine are prevented. My second operation was performed after this plan. The abundant hæmorrhage, however, obliged me to break through my sutures in order to remove the child; the placenta, as in the first operation, was inserted on the anterior wall of the uterus.

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* Communicated to the Société Impériale de Chirurgie.

"I have thought that the utero-parietal suture might be first made and the uterus then incised. The following is the plan that I have sketched out: to incise the abdominal wall; then to apply sutures between the uterus and the walls of the abdomen without previously incising the uterus. I would apply about seven points of suture on either side. The uterus would then be incised between the points of suture, the membranes opened, and the fœtus removed. In this manner the three accidents mentioned above would be avoided. What might be the disadvantages of my operation? The fœtus, it may be said, would probably be wounded; in the dead body I have performed the operation without touching the child. Might not the contraction of the uterus be obstructed in consequence of its attachments to the abdominal walls? I do not think so. The abdominal walls are distended and the uterus remains in the abdomen for a long time after delivery; besides, the experiences of M. Lestoquoy prove that this fear is not well founded. As chloroform may cause vomiting, I have endeavoured to replace this agent by chloral. A female after an administration of four grammes of chloral tolerated an application of the forceps; the pain, however, in this case was not entirely abolished. In another patient the chloral draught was rejected by the stomach."

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 246.—*A Case of Multiple Cysts of the Ovary taken for a Unilocular Cyst; Puncture; Death from Peritonitis in Fifty-two Hours; Remarks on the Chemical and Toxical Properties of Ovarian Fluid.*

By Dr. VERNEUIL.

(*Gazette Hebdomadaire*, No. 13, 1870.)

The following case is detailed by M. Verneuil in an article on "death from very small operations:"—

Leonie Bouland, aged twenty-four years, was confined in the month of June, 1868, without any serious symptoms; she had previously been in fair general health. After the delivery the abdomen remained large, and then during the months of August and September increased rapidly in size. Early in October the woman was admitted into the Lariboisière under the care of M. Oulmont, who, after a most careful examination, diagnosed a unilocular cyst of the ovary. The patient was afterwards transferred.

The abdomen was then very large, much distended, and perfectly regular; no appreciable prominence could be made out. There was complete dulness in front, but above and behind a sonorous zone in a horseshoe form corresponding to the displaced intestines. There was no œdema of the lower limbs, and no dilatation of the veins of the abdominal wall. No indication of any hepatic affection, nor of obliteration of the vena cava. The urine was normal. Considerable inconvenience was caused to the patient in consequence of the size of the

tumour. The patient was much emaciated and dyspeptic. There was one sign in favour of ascites; this was distension with slight elevation of the umbilical cicatrix. It was concluded that in consequence of the pregnancy the abdominal wall had been thinned at this point, and also that there might be at the same time a certain quantity of fluid in the peritoneum. Cystic disease of the ovary was diagnosed without hesitation. It was believed to be unilocular, as a blow upon the surface of the abdomen, however slight and at whatever point it was made, was instantaneously and very distinctly transmitted to the opposite extremity of the percussed region.

As intervention was urgently demanded, and there seemed to be no formal contra-indication, the following plan of treatment was decided upon:—

1. A puncture both for exploratory purposes and for evacuation.
2. Next, after a few days, to make a fresh puncture and to inject iodine before the sac could regain its former dimensions.

On October 21st, at ten o'clock in the morning, a puncture was made with a small trocar. After the instrument had been withdrawn there flowed away about one litre of a viscid transparent fluid of the colour of clear gum, which, when treated with nitric acid, presented an abundant precipitate of albumen. The abdomen being then less tense, one could distinguish through its walls some irregularities. On a second puncture another cyst was emptied of about 500 grammes of a clear fluid, analogous to that withdrawn after the first puncture. Three smaller sacs were afterwards emptied by breaking down the partitions by means of the unarmed canula.

An error in diagnosis was thus clearly demonstrated, and the operation then suspended. The small punctured wound was then closed by adhesive plaster, and covered by a pad of cotton wool and a bandage. The case was then diagnosed as one of multilocular cyst, or of certain malignant growths of the omentum giving rise to ascites. The presence of so abundant a precipitate of albumen on the addition of nitric acid, and the distension of the umbilicus, led to the supposition that there was ascitic effusion. The day of the operation was passed quietly by the patient, but in the evening the abdomen became painful, and vomiting occurred. On the following morning there was much abdominal tenderness, great distension, obstinate vomiting, thready and very frequent pulse, pinched countenance, and ardent general peritonitis. Calomel was prescribed, and inunctions of mercury and belladonna, but without arresting the course of the disease. The patient died on the morning of October 23rd, fifty-two hours after the puncture.

The autopsy cleared up this enigmatical case. On removal of the abdominal walls the cavity was found to be filled by a great number of distinct sacs, which were distinctly isolated from each other, and united merely by a pedicle more or less extensive to a solid mass of the size of two fists, that represented the left ovary. These sacs, the dimensions of which varied between that of a cherry to that of an infant's head, were fatty, with rosy, amber, or reddish-coloured fluid, or with a secretion similar in appearance to altered blood. Their walls were extremely small, so as to be torn by the slightest contact, and to permit the effusion of the cyst contents into the peritoneal cavity. Ovoid or

spherical at the superficies of the tumour, these sacs became irregularly polyhedral from pressure in the deep-seated parts. Those which had been punctured during life could be recognised by their form and by their contracted and almost empty sacs. The ovarian mass contained a crowd of cystic cavities, but the larger portion was constituted by a soft, friable, very vascular pulp of cerebriform appearance, resembling in fact softened and rapidly growing sarcomata.

A microscopical examination was not made. The peritoneum presented traces of a subacute plastic inflammation; there were soft adhesions, which could be readily broken down; these probably had not existed before the operation. The effused fluid, of which there was a small quantity, scarcely one litre and a half, was turbid, of a reddish colour, but flocculent. It could not be determined whether this had been due to an exudation from the serous membrane, or to rupture of a certain number of sacs before or during the autopsy.

M. Verneuil offers the following remarks on this case:—

"Pathological anatomy explains the error of diagnosis in this case; in fact the suppleness of the walls of the cysts permitted them to fill the abdominal cavity without forming either projections or lobes, to transmit, owing to their extreme tenuity, the percussion of the finger as if only a single sac had been acted upon, to be ruptured in a certain number during the proceeding of puncture, and to pour out their contents over the peritoneum. These contents differing from those met with in simple cysts and without doubt possessing irritating properties, excited subacute peritonitis.

"I do not see how the error of diagnosis could have been avoided, and by what signs one can be enabled to recognise these multiple cysts. There was then a deplorable concourse of circumstances which inevitably led my colleague M. Oulmont and myself, as well as many other physicians who had examined the case, to commit an error.

"With regard to the therapeutical point of view, can I accuse myself of anything? Certainly in the existing condition of things it would have been preferable to have performed ovariotomy at once. Without doubt the operation would have been a laborious one, for a certain number of cysts would have infallibly been ruptured under the surgeon's hands; on the other hand, the absence of adhesions would have rendered it practicable, and a minute cleansing would have freed the peritoneum from effused fluid. But the preliminary puncture had also its *raison d'être*, it determined the diagnosis, an absolute want in the presence of errors committed by most experienced practitioners. In a case of unilocular cyst it would have diminished the capacity of the cyst, and prepared it for the successful action of an iodine injection, an excellent method of treatment in cases of a single sac. In a case of multilocular cyst the puncture would have arrested for a time the progress of the tumour and established firmly the indications for ovariotomy. But, it will be said, the exploratory puncture having once determined the error of diagnosis, it becomes necessary at once to perform extirpation. One will then probably arrive at the conclusion that every multilocular cyst ought to be removed in order to avoid the inherent dangers of simple puncture, but I do not agree to this. Ovariotomy is not one of those operations that can be improvised like deligation of a vessel or

relief of a strangulated hernia, and precipitation in the performance of this proceeding has more than once led to lamentable results. An insurmountable obstacle was presented to me. The patient was in a large ward of a great hospital; a condition which has hitherto hindered and will always hinder me from practising ovariotomy in the Lariboisière.

"To resume: having under one's eyes all the parts of the process, I acknowledge: firstly, to having made an error in diagnosis; secondly, to having practised an unsatisfactory operation; thirdly, to not having had recourse to what would have effected the greatest chances in favour of the patient; but in return for these confessions it will be necessary to allow for me that in this difficult case everything seemed to have combined for deceiving me and for assuring the death of the patient.

"Before concluding these remarks I wish to insist upon a point which has too frequently been overlooked by authors—viz., the quality of the fluid contained in ovarian cysts. The fluidity or viscidity of this fluid, and its mixture with foreign elements, as pus, blood, cholesterine, &c., have justly been insisted upon, and from all these characters useful indications have been drawn for prognosis and treatment; but surgeons have not sufficiently studied the chemical properties of the fluid, and especially its more or less irritating action upon the peritoneum. In the present case the effusion of a moderate quantity of cystic fluid set up a subacute peritonitis. Had then this fluid phlogogenic or energetic poisonous properties? Did it act like a poison by absorption, or as a caustic by irritation? This is a point which deserves study, and concerning which I have utilized some documents derived from my own experience, and some researches commenced by my friend M. Nepveu. Scientific records contain a great number of cases of intra-peritoneal rupture of ovarian cysts, ruptures which were produced either spontaneously or under the influence of an abdominal contusion. These cases terminated in different ways, in cure, in speedy death, and the development of a more or less severe peritonitis.

"In order to explain these differences, one invokes idiosyncrasies and the greater or less susceptibility to peritonitis; but is it not necessary to attribute to the effused fluids different chemical or toxical properties? The solution of these questions will depend upon chemical analysis and pathological experiments. A few words in the first place upon the origin of the present remarks.

"After an ovariotomy at which I assisted, M. Matthieu, who had supplied the necessary instruments, immediately placed them in water, for the reason, as he stated, that the contents of certain ovarian cysts blackened, altered, and even corroded very rapidly the most polished steel. This fact struck me; desirous to verify it, and having some days afterwards an opportunity of puncturing an ovarian cyst, I collected in a closed vessel the fluid, which was turbid and of a brown colour, and allowed to remain in it several pieces of iron and polished steel. On the following morning these pieces were covered by a pulverulent black layer, so thick that it could not be wholly removed by the most energetic rubbing. The metallic surface had lost its polish.

"If the contents of certain ovarian cysts exert a chemical action so evident upon steel, can it not be readily believed that it will act in a like manner upon the peritoneal serous membrane, and may not the same acci-

dents which occur so frequently in consequence of spontaneous rupture of cysts of the ovary into the peritoneum be thus explained?

"M. Nepveu has collected a number of cases which, joined to those already reported by Dr. Tilt, of London, furnish a total of 97 cases. Out of this number there were 46 deaths and 51 cures more or less complete.

"Sometimes, though rarely, death was sudden; on other occasions it was speedy from subacute peritonitis, most frequently it occurred at the end of a few days.

"The nature of the fluid was observed only in twenty-five cases: in eleven it was purulent and caseous; in two gelatinous; in two made up of pus and encephaloid matter; in seven its character was very variable, being serous, red, reddish-brown, or black in colour, sanguinolent, rich in cholesterine, &c. In four instances there were dermoid cysts, and once the tumour was an hydatid cyst.

"Unfortunately in noting these differences, the physical aspect of the diverse fluids was regarded without any notice having been taken of their chemical properties.

"Having thought that experimentation might be of some utility in clearing up so obscure a subject, I advised M. Nepveu to make upon some animals injections with the ovarian fluid.

"These experiments, although few in number, have produced some results. Four dogs received into their subcutaneous cellular tissue some drops of ovarian fluid injected by the ordinary syringe. In all the temperature was raised by some tenth of a degree, amounting occasionally to one degree. The number of respirations was increased by one-third. The cardiac pulse four or five hours after the injection could not be counted. Other symptoms of greater or less intensity were also manifested; these consisted in loss of appetite, great thirst, great prostration, much barking, nocturnal sweating. The symptoms lasted from two to eight days, and then the general health was re-established. On one occasion the injections although scanty set up small local subcutaneous abscesses, but the creature experimented upon was a small dog who had suffered with much intensity the symptoms above described.

"The ovarian fluid injected in these experiments was of a fairly good character, serous, somewhat thready, and of a very light brown colour. Notwithstanding this apparent benignity, it possessed pyogenic and even, in one case, phlogogenic properties.

"The results of those few experiments justify the taking of minute precautions in the operation of ovariotomy in order to prevent the pouring out of cystic fluid into the peritoneum, and the care with which the cleansing of this serous membrane is carried out; they also supply a fresh proof of the assistance that may be given by experimentation to clinical practice."

Art. 247.—*Some Remarks on Lactation.**

By M. E. Decaisne.

(*Gazette Hebdomadaire*, No. 1, 1870.)

"1. Pregnancy, lying-in, and lactation ought to be considered as a chain which cannot be broken without prejudice both to the mother and the child.

"2. A great number of facts prove that the mother who does not nourish her own child is more exposed to peritonitis, to metritis, to different kinds of abscess, to certain chronic affections, and to cancer of the breast and uterus.

"3. It has been observed that chlorosis, anæmia, certain affections of the stomach, and that condition which has been vaguely designated *weakness of the constitution*, far from serving as motives for the practitioner to dissuade the mother from nourishing her child, ought, on the contrary, in the majority of cases, to cause him to look upon lactation as a means of re-establishing the perfect equilibrium of the functions of the organism.

"4. I admit, what is well understood, that there are certain women who cannot nourish their children, but maternal alimentation ought to be recommended in all cases in which the health of the woman will not be thereby compromised; and cases are rare, even in cities, in which she cannot perform this duty. It is not necessary that the mother should be fatigued by repetition of the process, neither is it indispensable that she be very robust and of irreproachable health for nourishing her child.

"5. I think that these reflections, which have not, I confess, the merit of complete novelty, ought to be taken into consideration in discussing that grave question of the mortality and alimentation of newly-born children, as it is probable that administrative regulations can never be resolved in a satisfactory manner. But I believe that if the problem which has been imposed at the present day for the meditation of physicians and economists can possibly be simplified, it will only be so by a return to observation of the laws of nature, which can never be transgressed with impunity."

Art. 248.—*On Chancrous Induration in the Female.*

By Dr. Alfred Fournier.

(*Annales de Dermatologie et de Syphilis*, No. 1, 1870.)

1. Induration is produced in the female as in the male, and with the former is even more frequent if one adds to the primary or chancrous indurations the secondary indurations which, though very common in the woman, are relatively rare in our own sex.

2. In speaking only of primary induration, the extra-genital chancres,

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* Communicated to the Académie des Sciences.

which supply a point of rigorous comparison between one sex and the other, are indicated in the same degree and in the same fashion in the woman as in the man.

3. The special chancres in the woman present, in the great majority of instances, an induration equal, and sometimes even surpassing that of the chancres proper to the man.

4. There is a limited region of the female genital organs (the vulvo-vaginal infundibulum) in which induration presents itself less markedly than when observed on the man. And it is at this period that exploration is rendered more difficult by local conditions.

Dr. Fournier states that the chancrous induration though absolutely equivalent and identical in both sexes, still presents some differences of a secondary order. Of these differences the two following are especially to be noted :—

"1. The superficial indurations are more common in the woman than in the man—that is to say, one meets more frequently in the former with well-marked lamellar indurations which may be compared to flattened discs, small hard masses, circular pieces of parchment, &c.

"2. The strictly circumscribed indurations with large centres are certainly more rare in the female than in the male. And what contributes to make them still less common is the fact that in women the chancrous induration properly so called is frequently surrounded by indurations of another character. From this point of view, there is a curious difference to be observed between the two sexes. In the male the chancrous callosity exactly encloses the chancre without passing sensibly beyond its limits, and the surrounding tissues most frequently maintain their normal suppleness. In the female, on the contrary, there is frequently formed around the primary chancrous nucleus a zone of induration of a more or less considerable extent. In many instances I have had an opportunity of demonstrating chancres which, though limited in extent and superficial, had caused the conversion of a small lip into a layer of cartilage and the whole of the greater lip into a resistent mass of extraordinary size and consistence. In cases of this kind, the primary induration is lost, enveloped as it is in a mass of peripheral induration, so that it cannot be distinguished. It then runs great risks of being confounded with lesions of another order."

Art. 249.—*On Puerperal Diseases.*

By J. Braxton Hicks, M.D., F.R.S.

(*British Medical Journal*, February 12.)

At a meeting of the Obstetrical Society of London, held February 2nd, Dr. Braxton Hicks read a paper on Puerperal Diseases. The paper comprised reports of eighty-six cases, which occurred to him in consultation in private practice; and they presented an aspect, different from hospital cases, which the author considered of value. They occurred after simple labour, all those in which operations had been performed having been excluded. The treatment had also been excluded,

in order not to draw off attention from the points desired to be noticed. Instead of classifying the cases according to *type*, he took *cause* as the basis of arrangement. He thought that, in many cases, the diseases might be advantageously viewed in this way. He divided the cases into two groups; first, those in which the cause appeared certain; secondly, those where the cause appeared uncertain. In the first group, which took in 66 cases, he placed scarlet fever as being the most numerous—viz., 36. These were divided into those in which the rash was present —19; and those in which there was no rash, but where the patient had been exposed to the risk of contagion—15; and two others, in which persons in the same house had sore throat, but whether of distinct scarlatinal origin or not was not clear. Dr. Hicks discussed the nature of the rash in the less marked cases, and how far it was similar to the rash of surgical pyæmia; and whether the latter were really distinct—a point difficult to say, unless we could be certain that the patient had or had not been under the influence of scarlet fever before admission. Regarding the patients without rash, but who had been exposed to the chance of contagion, he reminded the Society of the varieties of scarlet fever in the non-puerperal state, as also of those cases which had no rash and had sore throat; and showed how, even in those cases in which the puerperal patient was unquestionably attacked, the usual symptoms were modified; that is to say, the throat and glands were but slightly affected, and the rash nearly always appeared simultaneously over the body. The other symptoms were like those of so-called puerperal fever; so that, if the rash were added to the typical disease, no difference could be observed. These facts, he argued, should prepare us to believe that a disease entering the puerperal woman may become so modified as to produce symptoms more or less differing from the ordinary one. He dwelt upon the advantages which would be derived from more generally studying the modifications of disease under varying conditions, particularly the exanthemata; admitting, at the same time, the necessity of distinctly defining disease. At any rate, he considered the occurrence of puerperal fever, with exposure to the poisons, a wonderful circumstance if a mere coincidence. Viewed in another way, out of 32 cases of typical puerperal fever without a rash, half had been exposed distinctly to the contagion of scarlet fever; of the other half, it could only be affirmed that no such cause could be detected. Six cases of erysipelas connected with parturition were given, showing the slight influence of this disease in private practice. In two instances, the attendants became affected with erysipelas of the face after the mother had become attacked by puerperal fever. Six cases of diphtheria, and two, apparently from typhoid or typhus, were also given. Next came nine cases where serious symptoms arose from decomposition of the uterine contents. After alluding to his paper read before the Leeds meeting last year, the author pointed out the analogy of a poison derived from this source, and one derived from without. Only one case of puerperal fever had occurred, which could be clearly traced to the medical man having attended a similar case. This was pointed out as very satisfactory, because formerly the conveyance of this disease was largely owing to the attendants. After considering the influence of maniacal symptoms on the puerperal state, the cases were gone into

which seemed to have no external origin, of which twenty were reported. There were some in which symptoms appeared early in labour, of which the symptoms appeared of a different kind to those which came on about the third to the fifth day. Some of the others were simply local, and probably traumatic, while others belonged to the typical puerperal fever. The various causes which might have produced dyscrasia in these were alluded to; and, in conclusion, the author thought that the cases showed that the parts bruised and abraded by the forces of labour, tended to recovery; that if any animal poison, such as of zymotic disease, were imbibed by the patient, the system might be so rapidly affected, that death might ensue before the ordinary symptoms showed themselves; or that they might show themselves in a more or less modified form, or in a manner so distinct that its origin escaped detection; that, under these influences, the parts which should have recovered tended to serious effusion, which might go on to suppuration; or inflammation might arise at once or separately in the uterus or its neighbourhood —viz., metritis, cellulitis, peritonitis, &c., and from these the system might again be affected by pyæmia and all its secondary affections, embolism, phlegmasia dolens, &c.; so that the patient was not only subjected to the influence of the primary poison, and to the local troubles thence resulting, but also to secondary blood-disturbance, the effect of the local mischief. So also offensive lochia would poison the system, and cause local irritations; but these, again, might affect the blood by pyæmia, &c. In like manner, any depressing influence, mental, aerial, functional, &c., would tend to retard recovery of the bruised parts, so that they might go on to serous effusion, suppuration, &c., and end, perhaps, in pyæmia and its results. Looking to the fact that, out of 86 severe puerperal diseases, more than three-fourths had been connected with exposure to animal poisons of one kind or another, the author endeavoured to impress upon all the great importance of removing these causes from the parturient woman, and particularly alluded to separation where scarlet fever existed in her house.

Art. 250.—*On Puerperal Fever.*

By Wynn Williams, M.D.

(*The Lancet*, February 12.)

At a meeting of the Harveian Society, held January 20, Dr. Wynn Williams read a paper on Puerperal Fever. He considered puerperal fever might be divided into two classes; the one depending on simple inflammation, the other on specific poison. The same tissues of the body may be attacked in either case: in the one, usually confined to one organ; in the other, almost general from the commencement. He considered the poison to be always due to the presence of putrid animal matter, and of course septic, in no way different from the septic poison, when seen in the male, or non-parturient female; that it might be produced at any time, by introducing the products of animal decomposition under the skin of the parturient or non-parturient; and that the only

difference is in the peculiar condition of the parturient female. He did not agree with those writers who believed it might be caused by the exposure of the lying-in woman to the peculiar poison of scarlatina, small-pox, typhus fever, erysipelas, &c. The post-mortem appearances differ in no essential form from those found in the bodies of those who have died from pyæmia after surgical operations. If the obstetrician has been attending a case of puerperal septicæmia, or indeed septicæmia occurring in any one else, he should place himself in a small room or closet, and place some scales of iodine over a spirit-lamp, and allow himself to be surrounded by its fumes.

Art. 251.—*On Puerperal Convulsions.*

By J. Hall Davis, M.D., F.R.C.P.

(*British Medical Journal*, December 18, 1869.)

At a meeting of the Obstetrical Society of London, Dec. 1st, Dr. Hall Davis read a paper on Puerperal Convulsions, illustrated by a history of thirty-three cases. Dr. Davis commenced his paper with a statement of the various pathological conditions under which convulsions presented themselves. He viewed the disease as occurring under two types, sthenic and asthenic, and also as partaking of the characters partly of epilepsy, partly of apoplexy. He found that at least in twenty-two of the cases, premonitory symptoms occurred—viz., emotional, or other disturbance of the cerebro-spinal centres; renal mischief; eccentric local irritations, gastric, intestinal, uterine, &c. Eight of the cases preceded labour; 17 commenced during labour; 8 followed. Obstructive difficulties in the labour were the exception. Fifteen of the cases occurred in primiparæ, their ages ranging from eighteen to twenty-five; 15 in multiparæ from twenty-five to forty-seven, only one being of the latter age. The medical treatment was as follows:—Bloodletting, followed by purging, sinapisms, or vesicants when necessary, and in two by opium, 21; chloroform, 7; purging and sinapisms, 3; opium, 1; supporting and antiseptic treatment, in a case of septic origin in 1; total, 33. Delivery was normal in 22; manual aid in breech-births, 2; version, 2; forceps, 5; craniotomy, 1; embryotomy, 1. The results to the mothers were: recovered perfectly, 30; partial recovery, hemiplegia, which had preceded the convulsions, remaining in 1; died 2, one of asthenic peritonitis; one with gall-bladder distended by calculi, and in second paroxysms. Two other cases, not included in the above 33, died in their first paroxysms, not having been previously treated. In three cases of threatened convulsion, treated prophylactically, the results to the mothers were: recovered perfectly, 1; recovered partially, 2; one with dimness of vision, which had long preceded labour; one with hemiplegia, which had existed previously. The result to the thirty-eight children (five being twin cases) was as follows:—28 living; of these, 24 were born without operative interference; 1 version; 1 breech case; 3 forceps:—10 stillborn, viz., 4 head-presentations, without operative aid; 2 forceps; 1 breech; 1 craniotomy;

1 embryotomy; 1 induction of premature labour. In 24 cases the convulsions preceded delivery, and here the results to the children were 14 living, 10 stillborn.

Art. 252.—*Cases of Metro-Cellulitis.*

Under the care of Dr. Hall Davis.

(*British Medical Journal*, June 11.)

The notes of the following cases were kindly furnished by Mr. Scully, the Resident Obstetric Assistant at the Middlesex Hospital :—

Case 1.—*Puerperal Metro-cellulitis following Protracted Labour.*—E. C., aged thirty-three, was delivered of her seventh child, a living female, about ten weeks before admission in Prudhoe Ward ; her labour lasted about two days, but was unattended by complication. Three days after confinement, she had rigors and was very feverish ; she also had much pain over the uterus, which, on vaginal examination, was found to be large and immobile; an offensive lochial discharge was present. She was treated at her own home for some time, and the more urgent symptoms soon subsided. On admission into the Hospital, the patient was in a very debilitated condition, and bore an expression of much suffering; her tongue was slightly coated, her pulse was quick and weak; she had no appetite, and her nights were sleepless. She complained of constant pain down the front of the right thigh, which was so fixed in a flexed state upon the abdomen, that any attempt at extension was attended with considerable suffering. Above Poupart's ligament on the right side, under the integument, there was a hard mass apparently fixed to the deep tissues, and very tender on pressure. The treatment consisted in a citrate of potash draught every four hours, linseed-meal poultices constantly to the right groin, and sedatives occasionally given internally, and in poultices to the affected groin. Four days after admission, the skin over the right groin slightly reddened, and, a week later, fluctuation was apparent at one point. An incision was now made through the skin, and a large quantity of pus evacuated. This gave the patient great relief; she was then put upon port-wine and tonics. The abscess continued to discharge pus for about nine days and then healed up. The patient remained thenceforward free from pain, and was enabled to extend the leg freely and walk about without any inconvenience. She was soon afterwards discharged convalescent.

It is highly probable that an abridgment of this patient's labour, by a timely resort to forceps-delivery, would have saved her from the tedious and painful illness which ensued.

Case 2.—*Metro-cellulitis from Cold caught during Menstruation.*—M. F., aged twenty-eight, not married, three weeks before admission caught cold whilst menstruating, and, feeling very ill in consequence, she was obliged to keep her bed for a fortnight. She had great pain across the lower part of the abdomen and back, was sick after every meal for two days, and had diarrhœa nearly all the time. About the same period, she noticed a thick yellowish discharge from the vagina. On admission, the pulse was 112 and the tongue clean. There was complete anorexia. She complained of constant pain across the hypogastrium, increased by micturition and on going to stool. There was a purulent vaginal discharge; the uterus was found to be perfectly fixed, and there was considerable induration of the cellular tissue surrounding the uterus, especially posteriorly in the direction of the sacrum. A poultice of linseed-meal and mustard was applied to the abdomen. Fif-

teen grains of bromide of potassium with ammonia and decoction of cinchona was given three times a day. The pain was to a great extent relieved by this treatment, and the patient felt better; it was, however, noted that she had, since taking the medicine, slept a good deal both day and night—this has been observed in other patients in the ward taking bromide of potassium. A fortnight after admission, the medicine having been continued in the meanwhile, a vaginal examination revealed a considerable diminution of the induration, and the uterus had become partially moveable. As all pain had subsided, and her debility was still considerable, tonics were now administered. Her appetite and general condition improved steadily, the uterus became more freely mobile; and the only evidence remaining of the previous inflammation was a slightly increased density of the uterine tissue. The menstrual function having been properly re-established, and the patient's health greatly improved, she was discharged and forwarded to the Home for Convalescents at Walton.

Art. 254.—*Absence of Uterus in two Sisters.*

Under the care of Dr. Phillips, at Guy's Hospital.

(*British Medical Journal*, June 18.)

A patient, aged twenty, was lately in Guy's Hospital, under the care of Dr. Phillips, in whom no trace of an uterus could be felt. She was of dark complexion, and was rather diminutive in stature. The external genitals were perfect; the pubes was covered with hair; and the mammary glands were well developed. The vagina was represented by a short but dilatable canal, ending as a *cul-de-sac*, in the mucous membrane of which there were three small apertures. By means of a careful pelvic examination, the uterus was found to be wanting, and no ovaries could be felt. She had been subject, since her marriage at seventeen, to pain in the loins, to sickness and headache; and these were increased in severity for a few days every months; but there had been no hæmorrhage from the vagina, nor from any other part.

The patient stated that one of her sisters had never menstruated; and when the latter, aged twenty-one, presented herself among the out-patients, it was found that a similar malformation existed. She also was married; was very like her sister in appearance, but taller; and on examination, was found to have a very short vagina, but, as far as could be ascertained, no trace of uterus or ovaries.

Art. 255.—*On the Glands of the Mucous Membrane of the Neck of the Uterus.**

By Dr. Despres.

(*Archives Générales de Médecine*, Décembre, 1869.)

1. The neck of the uterus contains follicular and ramified tubular glands, which are seated in the uterine muscular tissue, like the prostatic glands in the midst of muscular fibres.

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* Communicated to the Académie de Médecine.

2. These glands secrete a clear, viscid, albuminous fluid analogous to the prostatic fluid, which flows from the neck intermittently, and produces ejaculation in the female. This fluid, called the uterine fluid, issues slowly from the neck, and rests upon the os tincæ and in the cavity of the neck; it has been hitherto considered a kind of catarrhal fluid.

3. The ejaculation of the female is destined to furnish a vehicle for the zoosperms, to allow them to arrive with certainty within the body of the uterus.

4. The glands of the neck are obliterated during pregnancy, and form the Nabothian cysts. These cysts, however, are ruptured during labour and the contractions of the uterus.

5. The neck of the uterus is erectile; it becomes erected at the same time as the other erectile organs of the female, and opens up in order to allow the passage of the uterine fluid, which constitutes the ejaculation of the female.

Art. 255.—*On Fundal Endometritis.*

By C. H. Routh, M.D.

(*The Lancet*, May 7.)

At a meeting of the Obstetrical Society of London, held April 6th, Dr. Routh read a paper on Fundal Endometritis. After referring to three papers formerly read to the Society by Drs. Tilt and Meadows, and the President, on Gooch's irritable uterus, and showing how the three authors differed in their views, he stated that the disease in most of these cases was inflammation of the lining membrane of the fundus, and not flexions, or merely uterine congestions or inflammations. Dr. Routh then proceeded to explain Dr. Snow Beck's anatomical arrangement of the nerves of the uterus, showing that the fundus was supplied by a distinct set of nerves, in direct relation with the semilunar ganglia, and showed how their arrangement explained the radiations of pain. He then pointed out the gravity of fundal endometritis, as compared to affections of the cervix, and specified the symptoms. After a short reference to the microscopical character of the discharge, he stated that there were four varieties of the disease which he had observed. 1. The convulsive form, in which the fundal pain, passing down one of the thighs, increased by passing the sound, &c., was accompanied by a variety of convulsive seizures, such as spasmodic vomitings, tetanus, hysterical fits with or without mania, up to epileptoid fits and catalepsy; the symptoms persisting for some time until the catamenial function was fully established, or flooding occurred. 2. Inflammation of the fundal membrane with increased secretion, accumulation of this in the cavity from obstruction at the inner os, giving rise to symptoms of pregnancy or even labour, with intense fundal pain, all relieved by a sudden gush of discharge, persisting for months, and often recurring. 3. Chronic cases of Gooch's irritable uterus, with more or less complete loss of the power of walking. Here also the inflammation of the fundus was unmistakable. 4. Cases of acute fundal endometritis, which

sometimes rapidly passed into metro-peritonitis, generally fatal, although sometimes assuming a more chronic type. Cases of all these varieties were given, and the treatment of each was passed in review, being mainly local depletion by leeches, blisters, and occasionally dilatation by sponge tents, use of the hysterotome, anodynes, and measures locally antiphlogistic and calculated to produce a copious catamenial flow.

Mr. Gaskoin was particularly struck with that part of Dr. Routh's paper which referred to coxalgia as a symptom of endometritis, and related the particulars of a case he had observed in which it had been well marked.

Dr. Tilt strongly contested Dr. Routh's claim to originality in describing this disease; and said that he himself had devoted no less than seven chapters to it in his work *On Uterine Inflammations*. Dr. Tilt agreed with Dr. Routh as to the frequency and importance of endometritis; and said that it was generally confounded with inflammation of the cervix. He (Dr. Tilt) thought that, for all practical purposes, it was sufficient to divide the disease into acute, subacute, and chronic. He had found acute endometritis to be very rare; and his worst cases had occurred in young unmarried women. He considered a sudden gush of fluid, after sharp uterine pain, to be the best sign of subacute or chronic endometritis; and that when the gentlest pressure of the finger on the enlarged fundus gave exquisite pain, the wall of the womb should be considered diseased as well as the lining membrane. Dr. Tilt was convinced that many cases of subacute or chronic endometritis were best cured by the leeches, injections, &c., adapted to cure the coinciding inflammation of the cervix. The next indication was to secure free exit of the discharge, which would permit the safe injection into the uterus of a solution of nitrate of silver or tincture of iodine in cases that would not otherwise get well.

Dr. Gervis was hardly prepared at once to accept the classification proposed by Dr. Routh. The differences, for example, between the two varieties of fundal endometritis, termed convulsive and obstructive, appeared to depend on circumstances accidental rather than essential. The local disease in each case was the same; but occurring in the one in an individual of highly susceptible nervous system, it induced various nervous disorders; while in the other, owing to a closure of the internal os, the fluid products of the endometritis accumulated in the uterine cavity, and gave rise to those symptoms so ably described by the author of the paper. But it could hardly be said that it was the metritis which was either convulsive or obstructive. With respect to the tendency of acute metritis to become associated with pelvi-peritonitis, and on the extreme gravity of the symptoms, Dr. Gervis could fully corroborate Dr. Routh, and mentioned the particulars of a case of recent occurrence which bore out the author's views.

Dr. Rogers had observed, with Dr. Routh, some of the cases narrated, and believed that there was reliable evidence for Dr. Routh's conclusions, which he thought explained the symptoms of many otherwise inexplicable cases.

Dr. Routh said that Dr. Tilt, in his work, had not distinguished between general endometritis and inflammation confined to the fundus,

to which he (Dr. Routh) limited his four varieties of the disease. With regard to Dr. Gervis's observations, he said that it was true the first and second varieties were only modifications of the same disease, but in different phases, just as the endo-pericarditis and rheumatic ophthalmia were modifications of the same disease, but had different symptoms, and required different treatment. The first three varieties were seldom fatal, so that post-mortem examinations could not be had. The fourth variety was so; but, as an accoucheur, he felt strongly that he ought not to make post-mortem examinations of peritonitic cases, and so he had not asked for them in the cases he had met with.

Art. 256.—*On the Etiology and Treatment of Puerperal Metritis.*

By Dr. Hervieux.

(*Gazette Hebdomadaire*, No. 10, 1870.)

Etiology.—The causes of puerperal metritis are identically the same as those of puerperal poisoning, and need not be detailed here. But the modifications which the uterus undergoes during gestation, the vascular development necessitated by its enlargement and by the evolution of the fœtus, the contractile energy put into force by this muscular sac during the process of accouchement in passing from the gravid to the empty state, the rupture of the connexions which unite the placenta to the internal surface of the organ, the loss of blood more or less extensive which is always the consequence of this, and finally, the rapid change which takes place in the dimensions of the uterus immediately after delivery; all these conditions, conformable as they may be to the plan of nature, create a condition of imminent disease, peculiarly adapted for the production of those lesions which characterize the different kinds of metritis.

To these conditions, which are common to all lying-in women, it is necessary to add special conditions which seem to be of such a nature as to favour particularly the development of metritis.

There are two parts of the uterus that are especially exposed to injury at the time of parturition, either by the fact of natural labour or by the manœuvres put into force for the removal of the fœtus: these are the cervical region and the seat of the placental insertion.

Contusions, lacerations, frictions, tearing of the neck, are to be considered as the best established immediate causes. In a great number of patients suffering from metritis this lesional condition may be made out, not only in the early days after delivery, but sometimes from eight to fifteen days after. In a case observed by Villemin a large rent was found unclosed at the end of the first month. I have had frequent opportunities of making out in women who were considered as recovered, irregularities more or less deep in the course of cicatrization, manifest proofs of the solutions of continuity undergone by the cervix. On the other hand, do we know that the neck is, with the placental surface of the uterus, the region in which the autopsy reveals the most frequent

morbid changes? Injury of the cervix, by becoming a cause of suppuration, becomes by that very fact one of the most susceptible pathogenic conditions for exciting metritis and opening the door to the most serious complications.

To possible lesions of the uterine tufts must be attributed a large share in the development of metritis. The simple fact of delivery, independently of all surgical interference, often gives rise to vascular ruptures which transform the cotyledonary surface into a veritable wound. This surface then suppurates, and, like the solutions of continuity of the cervix, exposes the patient to metritis and all its consequences. The point cannot be too much insisted upon, that vascular lacerations made out in certain cases over the placental surface of the uterus *are not very rare*, as has been stated by Robin, but they are far, very far, from being a constant fact. Like metritis and phlebitis, of which they are so often the starting-point, they are an accident. One may invoke these lacerations for the purpose of explaining certain puerperal affections, but they do not form part of the physiological conditions of the puerperal state. Like all injuries, they constitute pathological and accidental facts.

If lacerations of the neck and of the vessels of uterine mucous membrane consecutive to natural accouchement can engender metritis, with much greater reason may these lesions have the same result when they have been determined by violent surgical manœuvres; as version, application of the forceps, cephalotripsy, artificial delivery, &c. Women who have previously suffered from some uterine affection, such as chronic metritis, uterine deviation, &c., will by this very fact be more disposed to acquire puerperal metritis.

It may be conceived that premature abandonment of the horizontal position, a too prompt return to habitual occupations, and a standing position of long continuance when the return of the uterus to its former condition has not been sufficiently established, may, by giving rise to metrorrhagia, excite inflammation of the organ.

It must not be forgotten, however, that all these causes, the action of which is undoubted, will rest sterile with the immense majority of lying-in women, if these be only kept free from the influence of the toxic principle which produces puerperal poisoning. Is it not known that in the country and in the most barren localities with regard to surgical aid, the most serious imprudence and the most unfavourable manœuvres are followed by no serious consequence so long as the medium surrounding the lying-in women has not been vitiated by any evil emanation? When, on the contrary, this medium is infected, the above-mentioned causes exert their whole action, and metritis is manifested.

Treatment.—The prophylaxis of metritis consists entirely in the measures and precautions necessary for the female to take during labour and the period of the lying-in. It is unnecessary to enumerate here the special measures, which are described at length in all treatises on labour. It is to be recommended, however, that the practitioner should avoid as much as possible every measure capable of causing contusion or laceration of the cervix. Delivery ought to be the especial object of the most attentive circumspection. Premature and

too energetic traction ought not to be exerted on the cord, for fear of leaving in the uterus some *débris* of placenta, which, by its putrefaction, might become the starting-point of a suppurative endometritis. If, in spite of these precautions, a portion of placenta has been retained, one should proceed to its extraction, either with the hand carried wholly into the cavity of the womb—if the neck be dilated or dilatable—or by means of forceps, if the organ has already contracted too far.

When metritis is once declared, it is necessary to have recourse in this, as in all other affections due to puerperal poisoning, to the administration of ipecacuanha. This medicinal agent has the advantage not only of relieving the symptoms of gastric embarrassment which always coexist with the commencement of metritis, but also of producing in the digestive canal a beneficial revulsion, and perhaps of eliminating—together with the products of the biliary secretion—a portion of the absorbed poisonous principle.

The early attacks of pain which are produced in the uterine region may be always efficaciously combated by the action of cupping-glasses, to the number of six, eight, or ten, according as the pain is well circumscribed to the womb, or as it tends to radiate to the surrounding parts. The reappearance of the pains on the following day may necessitate a renewed application of the glasses; but it is rare—except in cases of subacute metritis, which nothing can arrest, and which causes death in two, three, or four days—for the pain not to be completely relieved by one application.

When, in spite of the relief of the local suffering, the uterus remains of large size, and the general symptoms persist, a large blister ought to be placed over the hypogastric region, and even to pass beyond this above, if it be necessary, with the aim of preventing a possible extension of the inflammation to the uterine appendages, and to a greater or less extent of the peritoneal serous membrane. As with cupping, the blister may be repeated if the malady be prolonged, and after the wound resulting from the former application of the blistering plaster is well cicatrized.

To these means of treatment may be added calming local applications, opiated cataplasms, and emollient fomentations, when the symptoms of metritis persist. If, in spite of these symptoms, the uterus remains in a state of considerable induration, mercurial ointment, spread in thick layers, and replaced several times in the day, may produce resolution of this persistent engorgement. The employment of the mercurial ointment should be continued until salivation is set up, as this phenomenon —according to Dr. Hervieux's experience—always coincides with a marked amelioration of the general and local condition.

Dr. Hervieux rejects the use of general warm baths, in consequence of the painful movements which are always necessitated by the transportation of the patients into the bath, and their removal. An aggravation of the uterine pains, and of the attacks of metrorrhagia—the bad effects of which are well known—may result from these disturbances of the patient. One has to consider also the possible chilling, which is always so justly feared by lying-in women.

There is one therapeutic modifying method to which Dr. Hervieux attributes great efficacy in the treatment of puerperal metritis. This

consists in vaginal injections, repeated four, five, or six times daily, in order to free the patient from the inconvenience resulting from the lochial discharge and its fœtid condition.

Dr. Hervieux considers that fœtid lochia may become the cause of a veritable self-poisoning, by infecting the air which lying-in women constantly inspire. Perhaps too the most subtile principles of this secretion may be susceptible of absorption by the uterine mucous membrane, and penetrate by this passage into the circulating current. It always happens that the constant presence of these products of uterine suppuration on the genitals, and in the linen about the patient, has a deleterious influence, and is often the source of fresh puerperal accidents. To suppress this cause of poisoning, is not to contend directly with the metritis, but to remove one of the elements which probably contributes most powerfully to maintain and aggravate this affection.

Art. 257.—*On Intra-uterine Injections in the Treatment of Puerperal Metritis.*

By Dr. Hervieux.

(*Gazette Hebdomadaire*, No. 11, 1870.)

The following is Dr. Hervieux's method of applying intra-uterine injections :—

"The patient being placed on her bed with her head raised and her buttocks supported by a cushion, and with a basin placed between her thighs, the medical attendant makes out by touch the position of the uterus and the direction of the neck, and then on the index finger of one hand placed below the os tincæ causes to glide the catheter with a double current carried by the other hand as far as the external orifice of the neck; the instrument is then carried gently through this orifice at first into the cervical isthmus and then into the cavity of the uterus. The catheter having been forced in its place, the canula of a syringe charged with the fluid injection is then introduced into the external orifice of one of the branches of the double catheter. Everything having thus been prepared, the piston is worked slowly and with moderation. In the place of a syringe one may substitute an elastic bag, care being taken to moderate the force of the impulsion of the fluid by means of a tap which may serve to open or close the apparatus.

"The liquid forced through one of the eyes of the catheter over the internal wall of the uterus returns partly by the neck of the uterus and the orifice of the vulva, and partly through the external orifice of the free branch.

"It is necessary to take care to rotate the catheter and to move it about in order to facilitate the contact of the fluid with all parts of the internal surface of the womb. If the liquid does not return instantaneously either through the free branch of the sound or by the vulva, it is necessary to stop in order to avoid any possible distension of the cavity of the womb by the injection, to withdraw the catheter, to clear it, and then to withdraw the injected fluid.

"In using a syringe care should be previously taken to empty it of all the air that it contains.

"The fluid used by Dr. Hervieux for intra-uterine injections is chlorinated water of varying strength. The quantity of liquid injected at a single sitting varies from 200 to 900 grammes. Generally the injection is continued until the liquid, which at first flows away in a very saline condition and charged with sanguinary, purulent, and pseudo-membranous detritus, becomes clear and limpid."

Cases are reported by Dr. Hervieux to show the utility of intra-uterine injections, and the memoir is concluded with the following clinical observations:—

"The cases which are here given leave no room for doubt as to the utility of intra-uterine injections in cases of suppurative endometritis. In all instances, without any exception, these injections determined a more or less rapid amelioration of the general and local phenomena which conducted the patient to recovery.

"The pathological fact to which they were specially directed—viz., the fœtor of the lochia—was in all instances instantaneously and considerably modified. In fact, immediately after the introduction of the catheter with a double current into the cavity of the uterus there flowed away either a thick flocculent pus of a yellowish or greenish colour, sometimes with a pink or red tint, or a sanious and serous fluid greyish in colour, more or less thickened with a purulent or pseudo-membranous matter. But as soon as a sufficient quantity of detersive liquid had been forced through the catheter, this, which at first came away mixed with pus, blood, or organic detritus, finally returned in a pure and limpid condition. Immediately after the injection detersion was complete. During the following hours the secretion was reproduced more or less abundantly, but always in a much less fœtid condition and with a better appearance. Thus, as a first result, we have immediate diminution, if not complete abolition, of the fœtor of the lochial discharge. At a later period, as the uterine secretion improves in its appearance and odour, it diminishes in quantity, until at last its physiological quality and quantity is restored.

"Uterine catheterism, by allowing us at each sitting to measure the height of the cavity of the womb, has shown that the injections have the action of accelerating the retrogressive movements of the organ, which sometimes has a tendency to remain stationary. In less than forty-eight, and even twenty-four hours in some cases, we have obtained by intra-uterine injections differences of four or five centimetres in the height of the cavity.

"A not less precious result, and one which is almost constant, is the progressive diminution of the fever. At the same time that the lochia improve in appearance, the pulse sinks, and in many of the reported cases one was able to follow its gradual descent from 108, 112, and sometimes 120, to 104, 96, 92, 84, &c. There is then an undoubted connexion between the condition of the lochia and the febrile state. To disinfect the lochia and to restore their normal quality and abundance, is to lower the fever and to re-establish the disturbed equilibrium. With the fall of the pulse coincides the disappearance of all the general phenomena which accompany the febrile condition: cephalalgia, lingual saburra, loss of appetite, constipation or diarrhœa, agitation, insomnia.

Even the abdominal pains, that constitute, always more or less, of a grave index of the local condition, are promptly relieved, and at the end of a few days one observes order and calm to succeed in the organism to the preceding train of menacing symptoms.

"In one of my patients, in consequence of her wilfulness and of a resistance against which I thought it right not to contend, intra-vaginal were substituted for intra-uterine injections. A renewal of the general and local symptoms was the consequence of this substitution. The intra-uterine injections having been re-established at the request of the patient herself, amelioration again established itself, and a cure was produced.

"If one considers of how many serious puerperal maladies putridity of the lochial flux may be the cause, it will be conceivable how great an interest we have in contending by all possible means against this putridity. Intra-uterine injections are and will remain a precious resource in all cases where there is reason to dread the effects of morbid alterations in the lochial discharges. When, for example, after a severe rigor a violent febrile action is manifested, accompanied by more or less acute hypogastric pains and by fœtid lochia, are we not authorized in having recourse, concurrently with ordinary measures, to those injections which experience demonstrates to be really efficacious in bringing about the cessation of that fœtor which always indicate a serious local condition?

"The question remains of the danger attending intra-uterine injections. I will not venture to assert that this is completely answered by my reported cases. Although I have not had any bad results to deplore, it does not follow that my practice in this respect will be always successful. However, I make the remark that Averard's catheter, by offering to the injected fluid an ever free and ready issue, prevents the effects of the retention of this fluid in the uterine cavity—a retention which has undoubtedly caused many catastrophes registered in the annals of science. In the second place, even when danger by this means cannot be altogether guarded against, I affirm that in the presence of the terrible consequences to which morbid changes in the lochia may give rise in lying-in women, it is not logical to repudiate a powerful method of cure under the pretext that it may in certain exceptional cases compromise life. This is not more rational than to reject chloroform because this agent likewise exposes the patient to the risk of sudden death; bleeding, because it may cause phlebitis; opium or belladonna, because these drugs may, even in small doses, occasionally cause poisoning.

"Intra-uterine injections therefore should be retained in practice; and, speaking for myself, I shall never hesitate in having recourse to them whenever an impure condition of the lochial flux threatens the introduction into the organism of a poison which we know to be so frequently fatal."

Art. 258.—*Chronic Metritis in its Relation to Malignant Disease of the Uterus.*

By E. Noeggerath, M.D.

(*The Medical Record*, November 15, 1869.)

At a meeting of the New York Academy of Medicine, held Oct. 21st, Dr. E. Noeggerath read a paper in which he presented the result of a few observations intended to establish new facts concerning the connexion between chronic metritis and malignant disease of the uterus. He first made a few remarks with regard to the condition usually called *chronic metritis*, a term now vaguely used, being applied to every pathological condition which exhibits signs of an inflammatory nature. He formerly committed the same error, calling all those pathological conditions of the womb chronic metritis which manifested themselves by tenderness, swelling, and an increased diameter of the uterine axis, and which were benefited by a so-called antiphlogistic treatment. The diseases most frequently thus misnamed are—congestion of the entire or part of the uterus, with or without catarrh and erosions; imperfect involution, with catarrh of the body; circumscribed or diffused hypertrophy of the utricular glands; chronic perimetritis, with secondary affection of the uterus; retroversion or retroflexion, accompanied by obstruction of venous circulation; imperfect involution of the seat of placental attachment; submucous infiltration of part of the body or of a section of the cervix.

One reason why so many different diseases have been comprised under this name is the fact that most of them are productive of the same class of rational or subjective symptoms indicating irritation.

2nd. The so-called antiphlogistic or alterative treatment, applied to either of the above pathological conditions, has led to similar beneficial results.

3rd. The differential diagnosis is very difficult to establish, even with thorough knowledge and ample experience.

Lastly, one of the leading authors in gynæcology, Prof. Scanzoni, has described quite a large number of uterine diseases, in his well-known pamphlet, under the name of chronic metritis, stating that the disease in question took not only the first rank in frequency among the several affections of the female sexual organs, but even among the diseases to which the human body in general is liable. These are the causes which have contributed to render the name of chronic metritis rather vague, and make it desirable to have its meaning restricted to certain well-defined limits.

The disease which he means manifests itself by certain peculiarities which give it a distinct character, and enable us to recognise it from among other similar conditions.

With regard to its pathogenesis, all authors, with very few exceptions, agree as to its inflammatory character. The view generally entertained is that advocated by Scanzoni, generally known and usually accepted. His own views on its origin, based on close study of the subject for many years, are somewhat at variance with those now in

vogue, and coincide exactly with those entertained by Prof. Seyfert, of Prague.

With a single exception he has never seen a case of so-called chronic parenchymatous metritis develope itself in a uterus outside of the puerperal state.

The idea so generally adopted that chronic metritis is the secondary stage of acute metritis, is entirely erroneous. The former stands in the same relation to the latter as cirrhosis of the liver does to acute inflammation of that organ. They are two distinct affections.

Acute inflammations of so-called parenchymatous organs are exceedingly rare, and this holds good especially with regard to the uterus outside of the puerperal state. The latter affection is of such rare occurrence that the doctor declared to have seen it certainly not more than two or three times. Its issue, however, is not chronic metritis, but either resolution and restitution ad integrum, or shrinking of the organ in all its diameters. Suppuration also has been seen in a very few instances.

Nor has he ever observed chronic metritis as a sequel of so-called uterine irritation, passive vascular congestion, catarrh, endometritis, perimetritis, fibroid tumours, dislocation or disease of the heart. In one single instance he had met with it as a result of cachexia, coexisting with chronic induration of the ovaries and liver.

The disease in question is the combined result of subinvolution of the uterus and a process of exudation which takes place in the tissue of the uterus immediately after delivery, in consequence of puerperal fever. This interruption of retrogressive metamorphosis takes place whenever the natural involution of the uterus is interfered with by some injurious influence, so that the absorption of the exuded masses deposited between the muscular elements cannot be properly accomplished. This results in a development and permanent deposit of cellular tissue within the walls of the uterus.

Both cavities and tissue of body and neck are always equally enlarged. The affection extends over the entire organ. All those cases which have been described separately as chronic metritis of the body and of the neck are affections of quite a different character and bearing. By exploring the uterus with the sound, we find that the long diameter is always considerably increased, say from three-quarters of an inch to two and three inches. Not so, however, with the width of the canal, it being usually narrower, from the fact that the hypertrophy is rather concentric than excentric. The tissue of the uterus is exquisitely anæmic and brittle. The capillaries being compressed to a high degree there exists very little secretion from the membrane lining the cavity. A peculiar kind of granulations which he has seen only in this form of disease, characterized by their irregular flattened shape and greyish, lustreless hue, very much like those seen in trachoma of long standing, owe their existence to a new formation of conjunctive tissue in the mucous membrane of the uterus itself.

The loss of vascular energy and the rigidity of the tissues involved explain the small amount of menstrual secretion. Wherever there exists profuse menstruation, we have to search for a complication to account for it.

The position of the uterine axis is never influenced by chronic metritis, since the enlargement is equably distributed all over its surface. Nor does any displacement of the uterus, no matter how complete, ever lead to its development.

Another peculiarity of the disease Dr. Noeggerath said consists in the fact that the signs characterizing the affection become latent during pregnancy, to reappear with renewed violence in the shape of an acute attack after delivery. Since he published his paper containing the data concerning this fact, in the *New York Journal of Medicine* of 1857, he has had occasion repeatedly to verify the ideas pronounced at that time, and he is now more than ever convinced that pregnancy and delivery in a woman suffering from chronic metritis will rather do harm than good. He has seen one instance where, under these circumstances, the size of the uterus has increased with every succeeding pregnancy, so that he found the womb a fortnight after the fifth delivery to be of the size of a uterus at the fourth month of gestation.

Dr. Noeggerath stated further that true chronic interstitial metritis is incurable by our ordinary means of treatment. He has, however, succeeded in relieving a few of the cases under his care by the operation first performed by Drs. Sims and Emmet of New York—namely, the amputation of the entire or part of the cervical portion.

Lastly, Dr. Noeggerath intended to prove that the tissue of a uterus affected with chronic metritis is apt to be transformed into papillary epithelioma.

He then read a history of six cases which he has carefully observed, and where the transformation of the tissue affected with chronic metritis into epithelioma or cauliflower excrescence could be traced step by step.

The cases reported were few in number—many, when we consider the few chances we have to observe malignant disease of the uterus at the very outset of its development—many, in view of the fact that interstitial metritis is of very rare occurrence. During the entire year which has passed, and although Dr. Noeggerath treats diseases of the female sexual organs almost exclusively, he has seen only two cases of interstitial metritis besides the three mentioned in the paper read.

In his further remarks on the subject the author gave a careful analysis of the earliest rational as well as physical symptoms indicative of beginning malignant disease. The question as to the curability of cauliflower growth is so far from being settled that one of the most recent authors on the subject, Dr. F. Kuchenmeister, a very experienced and able gynæcological operator, declares the affection incurable. From his description of cases, however, Dr. Noeggerath is led to believe that he has observed and operated upon his own cases at an earlier period than Dr. Kuchenmeister; and in three of them, which were true villous epithelioma, no relapse had taken place—in two instances twenty months have passed without a recurrence of the disease; and in the case first described, a careful examination of the tissue of the uterus removed after death (from epileptic convulsions), showed no trace of cancroid eight months after the operation.

It is a noticeable fact that only that variety of cancer which is called epithelioma, cancroid, has been observed in connexion with chronic

metritis. In none of those cases where true carcinoma was seen at that early stage of development where the condition of the uterine tissue could as yet be ascertained, was it found to develope on a neck enlarged by interstitial growth of cellular tissue. It is, however, the rule to meet with both cancroid and true cancer at such an advanced period of development that a physician must be unusually lucky who has encountered half a dozen instances of malignant disease in its early stages of development: and Dr. Noeggerath thought that he had seen more of beginning cancer than the majority of his colleagues, and thus he was enabled to collect the facts presented here for the first time. In the present confused state of pathological anatomy, as far as it relates to the pathogenesis of cancer, it would be too hazardous to offer an explanation as regards the connexion between interstitial metritis and cancroid.

If the observations should be substantiated by additional facts they would go pretty far to corroborate the views entertained by some of the most prominent advocates of the school of Virchow, Rokitansky, and Rindfleisch among the rest, who have by numerous and very careful researches arrived at the conclusion that the enormous masses of epithelial cells in a cancroid tumour derive their origin from the cellular tissue interspersed between the muscular strata.

Dr. Noeggerath would give the name of *diffused interstitial metritis* to the disease to which he referred in his paper, the first development of which, he said, is only seen during the puerperal state, and which consists in an abnormal growth of intra-muscular cellular tissue affecting the entire uterus, both body and neck being equally diseased, and which is cured occasionally by amputation of the neck. Pregnancy and delivery, he said, do not exert a beneficial influence, but are apt to prove a new stimulus to the abnormal growth of the uterus. It is a disease but rarely observed, and has a tendency to be transformed into cancroid or simple cauliflower disease.

Art. 259.—*Fibroid of the Uterus; Repeated Hæmorrhages; Transfusion; Recovery.*

By Dr. Gentilhomme.

(*Gazette Hebdomadaire*, 1868; and *British and Foreign Med.-Chir. Review*, January 7, 1869.)

Dr. Gentilhomme relates a case of remarkable interest. A woman was delivered of her second child in May, 1864. At the beginning of 1865 she had a profuse flooding, which was renewed at the next menstrual epoch. A fibroid the size of a fist was found. The bleedings were repeated, so that extreme anæmia was induced, attended with the most threatening symptoms. Transfusion was determined upon. A healthy woman supplied 125 grammes of blood; the apparatus of Moncoy was used. During the first moments of the operation nothing remarkable was observed, but when the stated quantity of blood had been injected the patient, whose checks had become red, cried out, "I am suffocating." Symptoms of asphyxia, thumping of the heart,

general shivering, pains in the chest and loins, falling of the pulse which had previously risen, general coldness, vomiting, and great thirst set in. These symptoms lasted two and a half hours, then gradually subsided; the breathing became easier, the pains went away, the pulse became strong and regular—120, warmth returned. From this time she gradually mended, taking soup, chicken, and wine. Some time afterwards symptoms of peritonitis appeared, and pus flowed from the uterus. It was found that the fibroid tumour had been cast into the cavity of the uterus, whence it was expelled spontaneously, hanging only by a slender stalk, which was easily separated. It weighed 140 grammes.

The author does not think the threatening symptoms attending the transfusion were caused by either air or clots.

Art. 260.—*On Rupture of the Uterus.*

By Ewing Whittle, M.D., M.R.I.A., Lecturer on Medical Jurisprudence to the Liverpool Royal Infirmary School of Medicine, &c.

(*Liverpool Medical and Surgical Reports*, December, 1869.)

Dr. Whittle gives the details of five cases of rupture of the uterus which have at different times occurred in his practice, and suggests the following mode of practice—viz., when we are attending a patient, from whose antecedents and constitution, and from the slow and unsatisfactory progress of whose labour, we have reason to fear that we have a feeble, flabby uterus to deal with, our first care should be to soothe the patient, and keep her quiet until the os is fully relaxed; one or two small opiates will contribute to bringing this about. Then, when the os is fully dilated, rupture the membranes, and if labour does not then proceed satisfactorily, deliver with the long forceps. In such cases as this, Dr. Whittle would particularly avoid the use of chloroform, except turning or the use of the forceps had to be resorted to.

(c) concerning the diseases of children.

Art. 261.—*On the Mortality of New-born Children.**

(*Archives Générales*, Avril, 1870.)

The causes of the great mortality of new-born children may be arranged in the following categories:—

1. Want, which so frequently engenders the innate debility of infants.
2. The neglect, sometimes unavoidable, but very often voluntary and unjustifiable, to perform the last act of maternity—viz., maternal suckling.
3. Ignorance of the most elementary rules of the alimentation and

* Report of the Commission of the Académie de Médecine.

physical education of an early age, and also the prejudices of every kind which result from this ignorance.

4. The abuse, unfortunately too widely spread, of artificial milk supply, always inferior to the maternal milk supply, and the difficulties in the application of which nearly always render it a dangerous method of alimentation.

5. Premature alimentation, which ought not to be confounded with an artificial milk supply, although these are always associated together.

6. The absence of necessary hygienic precautions, and especially the chilling to which new-born children are so frequently exposed during transport.

7. The neglect of medical precautions at the commencement of disturbances of health.

8. The want of regular supervision and medical inspection, as much in the matter of the recruiting of nurses as in that of the attentions to be paid to the infants.

9. The objection, still too general, of carrying the children to the mayor for the declaration of the birth.

10. The culpable carelessness and indifference of parents with regard to putting out children to nurse.

11. The frequent postponement of vaccination.

12. The localization of the nursing industries into too small a number of departments, whence the poorness of the blood of the women in these same departments.

13. The great number of illegitimate births.

14. Finally, the more or less criminal acts which constitute all the marked varieties of infanticide.

Art. 262.—*On the Treatment of Incontinence of Urine in Childhood and Youth by Collodion.*

By Sir D. J. Corrigan, Bart., Physician in Ordinary to the Queen in Ireland.

(*Dublin Quarterly Journal of Medical Science,* February.)

The treatment of this affection may be divided under two heads: the first, the constitutional treatment, being that conducted on the principle of strengthening the whole system, in the hope of including in it the erring organ: the second, that of dealing directly with the organ in fault.

With the first, or that of constitutional treatment, Sir Dominic Corrigan does not deal at all in the present paper.

The second head of treatment, or that of dealing with the organ at fault, has two subdivisions. The first having reference to medicines supposed to exert a specific action on the bladder, such as blisters, belladonna, copaiba, and to preparations of iron acting with a double effect, local and constitutional, and the second relating altogether to mechanical means of treatment, all difficult or impossible to be carried out. It is with this last Sir Dominic now proposes to deal.

Various mechanical means of treatment have been recommended.

Long time since Sir Dominic tried to close the opening of the prepuce with adhesive plaster, or court plaster, and in one case, that of a young man of twenty years of age, who had entered the army, and who was intelligent and careful, the result was favourable, but there were great difficulties about it. The application took time, and could not be carried into successful effect with boys and children.

The mechanical treatment to which the author now draws attention is the treatment by collodion. It is most easy of application, occupies scarcely a minute, and can be carried out at school, college, or elsewhere, in perfect privacy.

All that is necessary is, while the prepuce slightly curved up is held with the left hand, to smear over the little cup thus formed by the extremity of the prepuce with collodion by means of a small camel's hair pencil or blunt end of a penholder. Almost as fast as applied the collodion solidifies. In contracting it draws closely together the edges of the prepuce, and thus the exit for the escaping urine is closed.

A boy of eleven years of age has, after one lesson, been able to use the collodion, and has used it every night carefully and diligently, so anxious has he been to cure himself of what he considered a disgrace. A fortnight's use is sometimes sufficient for the cure. A relapse is easily dealt with. A solution of gutta-percha in chloroform would seem at first sight to be equally applicable, but it is not. The solution of gutta-percha is much longer in hardening, and it possesses no contractile powers.

When the child or youth desires to pass water the little wedge or cap of collodion is easily removed with the finger nail.

When Sir Dominic first used this collodion application, his expectation was, that the bladder would act so forcibly against it as to cause sudden pain, and oblige the patient to jump at once out of bed and quickly remove the collodion, and that he should then repeat the application before returning to sleep.

He was agreeably disappointed. There was no pain; no awaking; but on rising in the morning the prepuce was found slightly distended with urine, and the collodion was removed without difficulty.

This unexpected result would lead us to infer that the action of the muscular contractile fibres of the bladder has little to do in causing the nocturnal incontinence of urine in childhood, and that the escape of the fluid is rather due to want of apposition in the sides of the canal of the urethra, or to a feeble state of the circular fibres which are supposed to constitute the sphincter of the neck of the bladder.

Acting on this view, Sir Dominic Corrigan has recommended the child's bed to be made in such form as that while preserving the usual slope for head and shoulders, the rest of the bed shall gently rise as an inclined plane, from hips to feet, so as to allow the urine in the bladder to gravitate towards the fundus, rather than towards the trigone.

In all the instances in which the author has used the collodion application the prepuce has been, as, he believes, is nearly always the case in children and boys, projecting over the glans, or in a state that may

be designated as natural phymosis. But Sir Dominic does not anticipate any difficulty in using the same application in cases where the corona glandis might be exposed, as the collodion would, he should expect, act equally well over the orifice of the urethra as over the opening in the prepuce.

In conclusion, Sir Dominic expresses a strong opinion against the practice of awaking the child at stated intervals to pass urine; he has never seen any benefit whatever from it, and he thinks he has, on the contrary, always seen aggravation of the affection from it, not unreasonably to be explained, on the principle that such practice is really training the bladder to empty itself at stated periods, when the object is that it should be trained to retain its contents.

Art. 263.—*On Infantile Palsy.*

By Richard Volkmann, M.D., of Halle.

(*The Lancet*, March 5.)

Dr. Volkmann says that the sensibility in infantile paralysis is scarcely ever disordered, the bladder and rectum never implicated, and the sexual functions unaffected. The treatment may be considered hopeless, no important change occurring in any case which has lasted for six months or a year. Even electricity does no good.

Art. 264.—*The Sulpho-Carbolates in the Treatment of Certain Diseases of Children.*

By Ernest Sansom, M.D.

(*The Lancet*, January 15.)

At a meeting of the Obstetrical Society of London, held January 5th, Dr. Sansom read a paper on the above subject. He commenced by describing the chemical properties of sulpho-carbolic acid, and of its compounds with sodium, potassium, ammonium, calcium, zinc, and copper. The active agent in these salts is carbolic acid, which enters largely into their composition. The salts themselves are much inferior as direct antiseptics to the less stable carbolates, and when administered internally, they are apparently absorbed from the stomach without decomposition, and give off their carbolic acid by chemical change in the tissues. They are exceedingly soluble, by no means unpleasant to the taste, and never seem to produce toxic effects. Dr. Sansom then proceeded to describe the various cases in which he had used the salts, giving abstracts of a considerable number. Those in which he had found them most serviceable were zymotic diseases, especially scarlatina, measles, and diphtheritic sore-throat. In all of them he had met with strikingly beneficial results. In these he had chiefly employed the sulpho-car-

bolate of sodium, in doses of from five to ten grains every four hours. In rachitis, malnutrition, and diarrhœa, he recommended the sulpho-carbolate of calcium.

Art. 265.—*Notes on Anointing in Infantile Disorders.*

By H. Guard Knaggs, M.D., F.L.S.

(*The Lancet*, January 22.)

During the past eleven months Dr. Knaggs has been testing, with uniformly successful results, the value of a very simple method of treating such infantile complaints as atrophy, bronchitis, convulsions, diarrhœa, febrile disturbances generally, and indeed all disorders of childhood which are accompanied by an unnatural state of the skin.

The treatment simply consists in smearing with salad oil the whole surface of the body, from the crown of the head to the tips of the fingers and toes, the process being repeated every twelve, six, or even four hours, according to the urgency of the case. Of course, the use of a long flannel gown or small blanket is obvious, and the fluid should be slightly warmed.

The application of oil, the author writes, possesses the following immense advantages over the ordinary warm bath:—

1. Skin-action is more completely and permanently restored.
2. The danger of reaction is avoided, for there is no sudden change of temperature; and moreover the sheet of oil protects the surface from atmospheric influences.
3. It acts as a fuel-food, not only preventing waste of tissue, but actually increasing the bulk of the little patient.
4. It does not depress, but, on the contrary, appears to exhilarate.

It will scarcely be credited by many that the formidable affections above mentioned will frequently yield to this treatment, or at any rate show signs of abatement in from twenty minutes to four-and-twenty hours, but such is the case, though sometimes forty-eight or even seventy-two hours will elapse before any decided signs of improvement occur.

APPENDIX.

ART. 1.—*The Present Prospects of the Sewage Question in Relation to the Public Health, with a Brief Review of the First Report of the Commissioners appointed in* 1868 *to Inquire into the best Means of Preventing the Pollution of Rivers.*

By HENRY LETHEBY, M.D.

(*Medical Times and Gazette,* June 11.)

At a meeting of the Association of Medical Officers of Health, on May 21st, Dr. Letheby read a paper on the above subject. Hasty and inconsiderate legislation, said Dr. Letheby, promoted by those who had no real knowledge of the subject, had brought the whole question of the disposal of sewage into such a state that the public are not only loud in their complaints, but emphatically demand a remedy. A review of the Parliamentary history of the subject led to the conclusion that the Legislature had become so perplexed that they were glad to dispose of the subject by hasty legislation, or by handing it over to some Royal Commission not always discreetly selected. Bad as was this state of things, the future prospect was still more gloomy ; for it was to be feared that the same incompetent sanitarians who had brought on the present difficulties, would also be concerned with the future disposal of the question, and that Parliament would have again to correct the errors of inconsiderate legislation. If this could be prevented it would be of vast importance to the public, and the medical officers of health of the metropolis were especially fitted to aid in this task. Dr. Letheby then explained the complex nature of sewage, showing how each constituent had its specific influence on the general mass, and on the putrefaction to which it is subject. Although precise information was difficult to obtain, still the subject might be approached in two ways—by ascertaining the average amounts of solid and liquid matter contributed by each individual and by each trade ; and by analysing the daily sewage collected at various seasons. It was calculated by competent authorities, that the average amount contributed by each individual was 42·25 ounces of moist, or 2·25 ounces of dry matter daily. The general average of the washings of streets gave 262·6 grains of solid matter per gallon ; of which 113·3 grains were dissolved and 149·3 were suspended. The refuse of factories was determined by the second method, and it was found that the sewage discharged by day in the metropolis, contains about 94 grains of solid matter per gallon, of which 38 are suspended and 56 dissolved. The night sewage contains only about 79 grains of solid matter per gallon, of which 24 are suspended and 64 dissolved. Taking the average of all the results obtained, the metropolitan sewage may be said

to contain about 90·4 grains of solid matter per gallon, of which about 29·8 are suspended and 60·6 dissolved, there being about 15 grains of organic matter in each of the constituents. Examined under the microscope, the clear liquor is found to contain a large quantity of amorphous organic matter, and swarms with the lower forms of animal life; but on exposure to the air higher forms of infusoria appear. The sedimentary matter consists of undigested food, and also the products of some of the secretions, with a large quantity of black amorphous matter. When sewage has a very offensive odour it rarely exhibits much sign of animal life, but when diluted with water and exposed to the air, the bad odour disappears, and the higher forms of infusoria are developed, showing plainly the salutary influence of air and water in promoting less noxious kinds of decay. The mud on the banks of the Thames Dr. Letheby formerly found to contain only the lower forms of animal life, whereas in the middle of the stream, where there was an abundance of air and water, the highest forms of infusoria abounded. In rivers which receive the sewage of large towns the sedimentary matters deposit and putrefy, but the supernatant water containing all the soluble constituents passes on, and rapidly becomes clearer and clearer, until its organic matter is appropriated by living beings or destroyed by oxidation. This process is demonstrated by the improvement in the colour and odour of the water and the character of the vegetation. Dr. Letheby insisted upon this because the Rivers Pollution Commission were at variance with him on this point. He complained that his evidence had not been fairly quoted, for he had mentioned oxidation only as one of the many purifying agencies in a running stream. The investigations made by the Commission were severely criticised by Dr. Letheby because they had been made in winter time, when most of the agencies to which he referred were dormant, and because the air and sewage were enclosed in a bottle—a process which was highly unsatisfactory. In proof of his position, Dr. Letheby appealed to the large facts of nature; for everywhere our rivers were receiving the sewage of towns, and were yet undergoing a rapid self-purification. His view was likewise confirmed by Dr. Miller, Professor Odling, Dr. Taylor, Dr. Angus Smith, Mr. Hawksley, and other eminent authorities. Dr. Hofmann and Mr. Witt, in 1858, reported to Government that the formation of mud deposits in the bed of the Thames was by far the most serious evil resulting from the discharge of London sewage into the river. Dr. Odling reported to the Board of Works to a like effect. The chief point then to be arrived at was the rapid separation of the suspended matter in sewage, leaving the soluble constituents to mix freely with running water, to be appropriated by infusoria, or destroyed by oxidation. This process is best effected by keeping the solid matter out of the sewage. At Salford the plan of Mr. Goux is adopted, whereby the soil is received into tubs lined with some refuse absorbent. The Pollution Commissioners condemn this plan *in toto*. Their pet scheme is irrigation in all places, and under all circumstances. To carry out this plan, Dr. Letheby maintained that a porous soil was necessary, that the farm should be well adapted for the flow of drainage, that it must not be within reach of danger from atmospheric miasms, that it must have a ready market for its produce, and have an extent of not less than two acres for every hundred head of population. Even if all these conditions could be secured, the objections to the process on sanitary grounds are numerous; for land irrigated with sewage is always a fetid swampy morass, as witness the Craigintinny meadows near Edinburgh. At Norwood, at Beddington, at Aldershot, and at Banbury, the sewage farms are the subject of serious complaints. These miasms are not only offensive, but also dangerous

to health; in fact, it was the clearness of this danger which formed the motive for Parliamentary inquiries and enactments. If they are not injurious to health, then why all this extensive and elaborate machinery for getting rid of them? Dr. Murchison traced a particular fever to this very source, sewer gases being, in his opinion, the primary cause of enteric fever; and Mr. Creasy testifies to the prevalence of typhoid fever in the neighbourhood of the sewage farm at Beddington. Dr. Letheby mentioned a number of places investigated by himself which gave similar results. Again the efficacy of sewage irrigation is dependent on the percolation of sewage matter, and the distribution of it through the subsoil water. It follows then that this water must be polluted to such an extent as to endanger the neighbouring wells; as has been found by experience in many places. What evils would follow from this cause can easily be imagined, and if Prof. von Pettenkofer's theory of the connexion between subsoil water and cholera be correct, what frightful evils are we not preparing for ourselves? And yet another evil was to be feared, if the plan of the Commission were carried out—viz., the propagation of parasitic diseases. The ova of intestinal entozoa, distributed with sewage upon the land, would become attached to the crops, would be eaten by cattle, whose flesh would infect man. At present their access to the bodies of herbivorous animals is accidental; make it certain, and what would be the consequence? Dr. Cobbold's views on this subject admitted of no doubt. Although Dr. Letheby admitted that theoretically good results might be obtained from this system, yet so much care and attention was necessary that it could not be advantageously carried out in practice. A heavy flood of rain, dormant vegetation, or frost, were sufficient to derange that nice adjustment that was necessary to prevent the fæcal water from running over the surface and polluting all the wells. The other means of dealing with sewage, so as to separate the suspended matters and to remove a certain portion of those which are dissolved, is to submit it to chemical treatment. At Leicester, at Hertford, and formerly at Tottenham, the sewage was defecated with lime. About twelve grains of lime to a gallon of sewage was found to effect a speedy separation of all the suspended matters and also about one-fourth of the dissolved organic matter, leaving a clear liquor, which, when mixed with six or seven times its bulk of water, is no longer offensive. Crude sulphate of alumina is another precipitating agent, and is used at Stroud, the sulphate being made by adding about 20lbs. of sulphuric acid to a cwt. of powdered clay. Chloride of iron with lime is also a powerful defecator; it was formerly used at Northampton, and still is to some extent with lime. At Leamington the A.B.C. process of Mr. Sillar is in use. The substance used is a mixture of alum, clay, sulphate of magnesia, &c., diffused through water. Lastly, there is the process of Mr. Blythe, of adding a soluble phosphate of lime and sulphate of magnesia to the sewage. By these processes sedimentary matter is drawn from the sewage, and a considerable portion of dissolved organic matter is removed; but to be successful there must be good agitation of the sewage, and sufficient tank room for holding the sewage for not less than four hours. There should also be a means of filtering the defecated sewage before setting it free. Dr. Letheby would not enter upon the pecuniary point of the question, further than to warn enthusiasts against glowing accounts of commercial profit. Wherever sanitary improvement was the main object no profit was anywhere derived. His object, however, was to point out the serious dangers in the rash recommendations of the Royal Commission. A Royal Commission without any pretence of medical knowledge was singularly incompetent to deal with such a question.

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